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# WAR MACHINE

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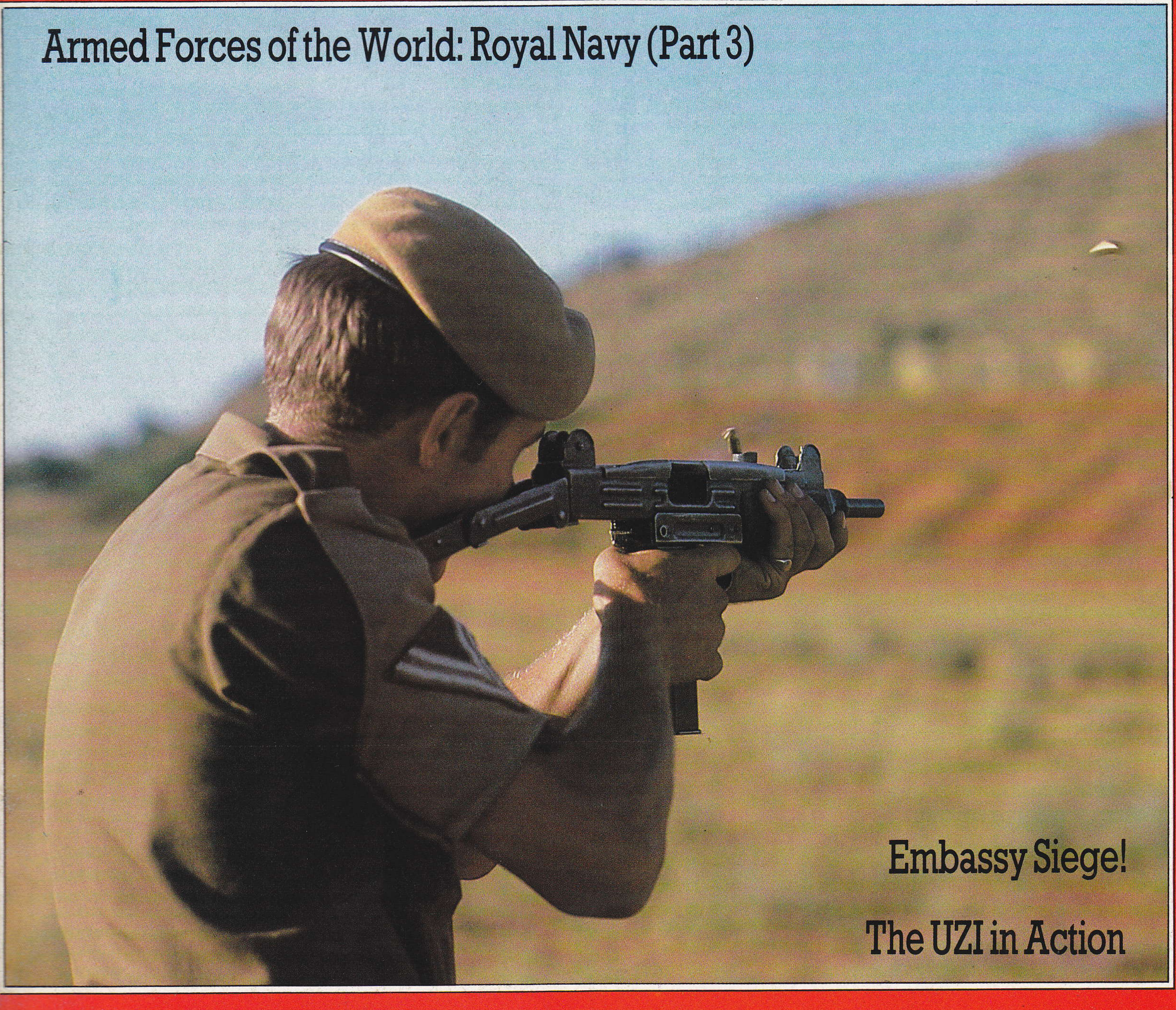

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A fully illustrated guide to Modern Sub-Machine Guns

# WAR MACHINE

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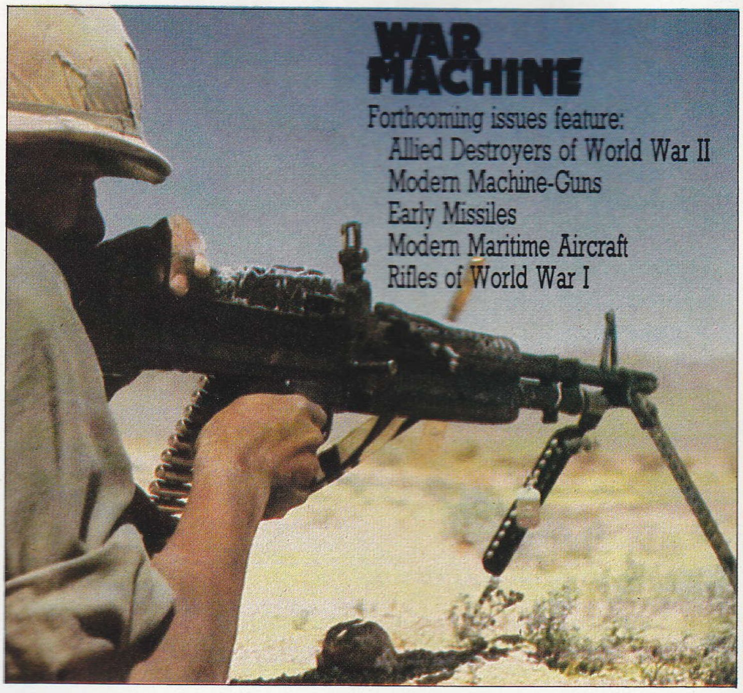

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# Modern Sub-Machine Guns

***Evolved through necessity in the confined spaces of the trenches during World War I, the sub-machine gun has found a useful place in modern armed forces. Small, cheap and easily concealed, it is an ideal weapon for facing the urban terrors of the latter half of the 20th century.***

*South Africa is one of the many nations to use the Israeli UZI. First seeing major service in the 1956 Arab-Israeli conflict, the UZI is one of the most successful post-war sub-machine gun designs.*

Ever since the assault rifle became a viable weapon during the latter stages of World War II the pundits have been saying that the sub-machine gun's day was over. The trouble is that no one seems to have told the designers of small arms or the men who use sub-machine guns. Today the numbers of sub-machine guns on the market are as high as ever, and more seem to appear each year. The modern sub-machine guns described in this issue are but a few of the more important types currently in use. There are many more types around, some of them having been in service since World War II, but most of the types described are of a much more sophisticated form. All manner of detail design features have been introduced to differentiate them from the hasty tube and sheet metal designs of World War II, although the same basic manufacturing principles are often used. Today there is more time to apply better finishes and construction methods, but while costs may have risen somewhat since World War II the modern sub-machine gun is still a relatively cheap weapon. Perhaps it is this that ensures the longevity of the type.

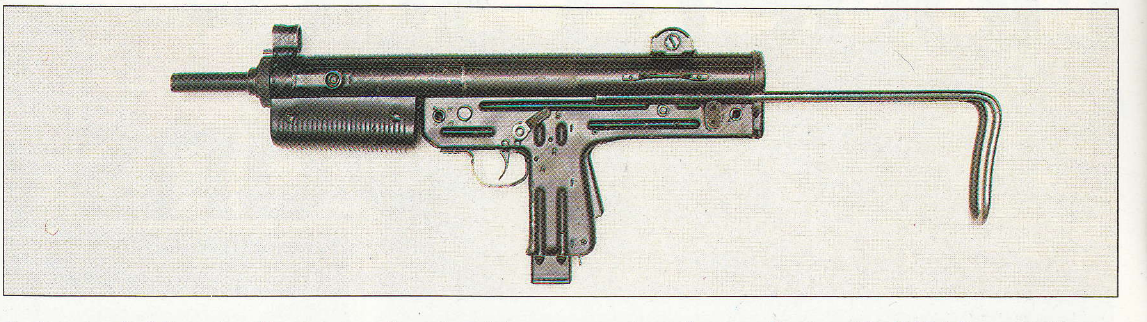
But it cannot be cost alone that maintains the sub-machine gun in use all over the world. Despite the many advantages that the assault rifle has to offer, it is still a complex and lengthy weapon that is nowhere near as effective in close-quarter fighting as the sub-machine gun. Despite the increases in weapon power achieved in recent years, many combats still take place at close ranges and here the sub-machine gun is still as effective as it was when it was produced to 'sweep trenches of the enemy' during World War I. The short and handy sub-machine gun still reigns supreme in such circumstances.

Today the sub-machine gun is carried by one new operator, the policeman or the member of a security organization. The growth of national and international terrorism in recent years has meant that the agencies set against it have to be armed as effectively as their highly organized and well-armed opponents. Thus the sub-machine gun has assumed a new and dangerous era, and it may be many years (if ever) before the weapon is no longer used in this relatively new and but dreadfully public cockpit.

***Outside the Washington Hilton, 30 March 1981, President Reagan has just been shot; his assailant is buried under a swarm of police and secret service men. Prominent is the Israeli-made UZI sub-machine gun, carried by the agent in the foreground.***

ARGENTINA

## 9-mm PA3-DM



***Captured by British forces on the Falklands during the South Atlantic conflict, the PA3-DM exemplifies the modern sub-machine gun, being simply designed and easy to manufacture.***

The Argentine **PA3-DM** is a typical example of modern sub-machine gun design in two respects; one is the use of the forward-mounted 'wrap-around' breech block and the other the ability of a relatively unsophisticated engineering industry to produce modern and viable weapons.

The 'wrap-around' bolt is now a virtual fixture on many modern sub-machine guns, for it provides two important functions. One is that the breech block is to a large extent forward of the chamber when the cartridge is fired, so providing extra mass for the recoil to overcome, thereby providing an increase in locking efficiency for what is otherwise a relatively effective but inefficient blowback system. The other advantage is that by placing much of the breech block around the barrel the weapon length can be much reduced, making the overall design shorter and handier for carriage and stowage. Nearly all these 'wrap-around' designs, and the PA3-DM is no exception, use the pistol grip as the magazine housing, and this has the advantage of allowing rapid aiming, for by holding the weapon with the 'master' hand, one-handed firing is possible as though the weapon is a pistol.

The first weapon to use this 'wrap-around' feature was the Czech vz 23 series, and it has appeared on many subsequent weapons. The Argentine design closely follows the Czech original in overall construction, for it relies on the use of simple stampings and has as its receiver housing nothing more than a section of steel tubing. The PA3-DM has its cocking handle on the left-hand side well forward so that it can be operated by either hand, and a hand grip is provided forward of the metal pistol group assembly. The PA3-DM may be found in two forms: one has a fixed plastic butt, while the other has a wire-form butt which telescopes forward on each side of the receiver. This latter is a direct copy of the wire butt used on the American M3 sub-machine gun. On both versions the barrel screws onto the front of the tubular receiver and the barrel can be adapted to mount a device for launching grenades.

The PA3-DM was used during the Falkland Islands campaign of 1982, though not in very great numbers. Some 'trophies' were returned to the United Kingdom and may be found in some regimental museums, but otherwise it is not a weapon that is likely to be encountered outside Argentina, where it is issued to the armed forces.

The PA3-DM is manufactured by the Fabrica Militar de Armas 'Domingo Matheu' at Rosario, from which the 'DM' of the designation is derived. It is only the latest model in a long string of sub-machine guns that have been designed and produced in Argentina since the period just after World War II. Many of these sub-machine guns were orthodox designs with little of note to mention, and not all of them reached the full production stage. Some were direct copies of successful designs elsewhere: for example, the **PAM 2** dating from the early 1950s was nothing more than a direct copy of the US M3A1 calibred in 9 mm (0.354 in). Some of the other designs, such as the **MEMS** series and the **Halcon** guns, were more adventurous designs that made little impact outside Argentina.

### Specification

**PA3-DM (fixed-butt version)**
**Calibre:** 9 mm (0.354 in) Parabellum
**Weight:** loaded 3.9 kg (8.6 lb)
**Length:** 700 mm (27.56 in)
**Length of barrel:** 290 mm (11.4 in)
**Muzzle velocity:** 400 m (1,312 ft) per second
**Cyclic rate of fire:** 650 rpm
**Magazine:** 25-round box

UK

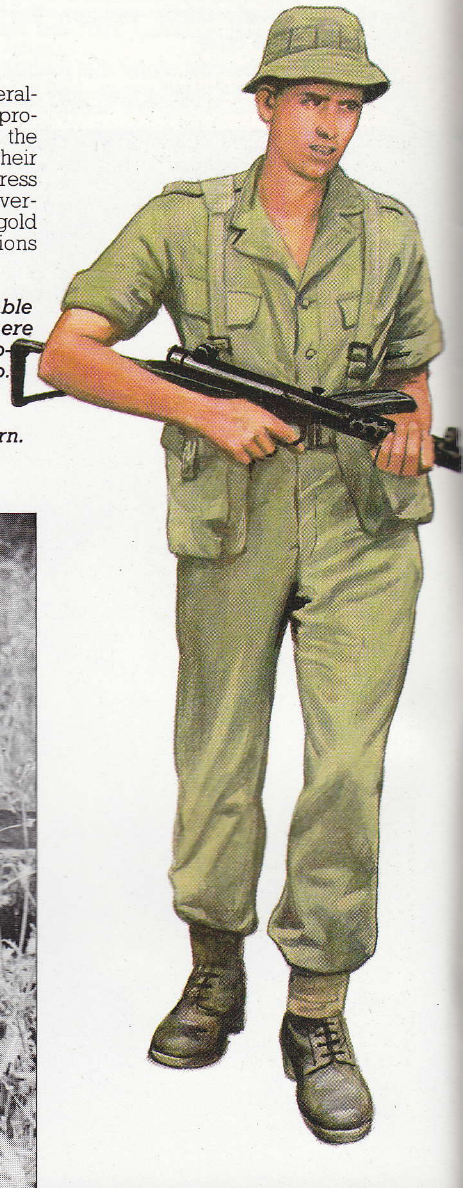
## 9-mm L2A3 Sterling

The sub-machine gun that is now almost universally known as the **Sterling** entered British Army use in 1955 although an earlier form, known as the **Patchett**, underwent troop trials during the latter stages of World War II. It was intended that the Patchett would replace the Sten gun, but in the event the Sten lasted until well into the 1960s.

The British army model is designated the **L2A3** and equates to the **Sterling Mk 4** produced commercially by the Sterling Armament Company of Dagenham, Essex. This weapon is one of the major export successes of the post-war years, for to date it has been sold to over 90 countries and it is still in production in several forms. The basic service model is of simple design with the usual tubular receiver and a folding metal butt stock, but where the Sterling differs from many other designs is that it uses a curved box magazine that protrudes to the left. This arrangement has proved to be efficient in use and presents no problems. It has certainly created no problems for the army in India where the type is produced under licence, or in Canada where the design is produced as the **C1** with some slight modifications.

The Sterling is a simple blowback weapon with a heavy bolt, but this bolt incorporates one of the best features of the design in that it has raised and inclined splines that help to remove any internal dust or dirt and push it out of the way. This enables the Sterling to be used under the worst possible conditions. The usual magazine holds 34 rounds, but a 10-round magazine is available along with a string of accessories including a bayonet. The weapon can be fitted with any number of night vision devices or sighting systems, although these are not widely used.

Several variants ot the Sterling exist. One is a silenced version known to the British army as the **L34A1**. This uses a fixed silencer system allied to a special barrel that allows the firing gases to leak through the sides of the barrel into a rotary baffle silencer that is remarkably efficient and almost silent in use. There is also a whole range of what are known as paratrooper's pistols that use only the pistol group and the receiver allied to a short magazine and a very short barrel. These are available in single-shot or machine pistol versions. Several types of finish are produced, including what must be that for the most luxurious of sub-machine guns, for one version is literally gold-plated. These have been produced for various potentates in the Middle East who use them for their personal bodyguards and to impress visitors; both silenced and normal versions have been produced with gold plating. Chromium-plated versions have also been made.



*Right: The Sterling saw considerable service in Malaya and Borneo, where the inherent inaccuracy of the sub-machine gun proved no handicap.*

*Below: The Sterling is seen on exercise in the UK, at Bassingbourn. It is being replaced by the new Enfield Individual Weapon.*

# Machine Pistols

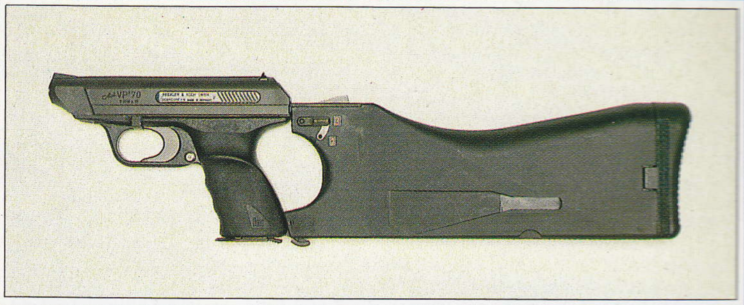
***The virtues of the sub-machine gun in close-quarter combat soon led designers to attempt to turn the contemporary self-loading (or automatic) pistol into a fully automatic weapon.***

Almost as soon as the automatic pistol was first produced designers were tempted into allowing their progeny to fire in fully automatic bursts. The conventional automatic pistol simply fires a round, re-cocks itself and loads another round ready to fire on the repeated pull of a trigger. By simply keeping the trigger mechanism out of the way it was (and is) easy to allow the pistol to produce burst fire, but the designers soon learned that this was not a course to be undertaken lightly.

The pistol cartridge is weak compared with a rifle cartridge, but can still produce considerable recoil forces. If such cartridges are fired in rapid succession they can soon overcome the mass of a light hand-held pistol and force the muzzle to rise or jump about erratically. In either case aimed fire becomes almost impossible. Moreover, the bolts of most pistols are light, and this allows full automatic fire to be very rapid indeed, to the extent that the limited ammunition capacity of most pistols will be used in less than a second. These two limitations have made the machine pistol something of a rarity among combat weapons, but the machine pistol has nonetheless turned up throughout small arms development.

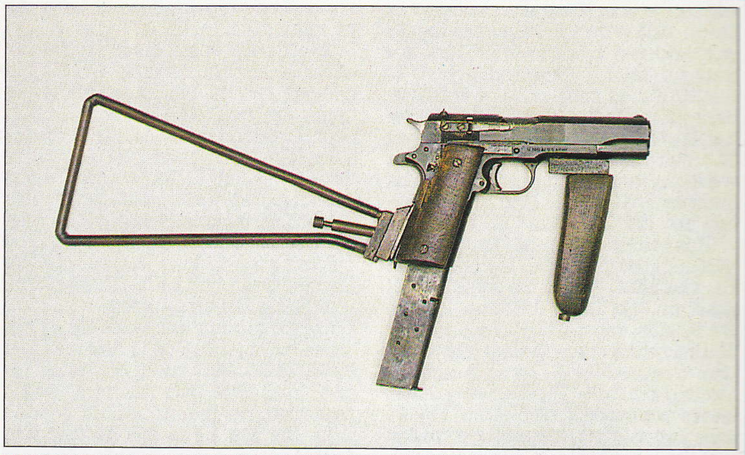
The first of the machine pistols to be used on any large scale were the Mausers. Derived from the C/96 pistols, the *Schnellfeuer* (quick fire) pistols became very popular at one time. They must be judged as among the more successful of the type, for the old C/96 'broomhandle' pistols had the bulk and weight to overcome, partially at least, some of the recoil forces while the box magazines in front of the trigger guard had the space potential to accommodate long magazines. But outside Germany and to a lesser extent Spain these Mauser machine pistols never caught on to any great extent in Europe. In the Far East, however, it was a different story. The Chinese took to the Mausers with a will and were soon turning out their own locally-produced copies that varied in materials and manufacturing standards from the excellent to the vile. The Chinese found the machine pistol to be just the sort of weapon that struck fear into an opponent, and the war lords who ruled in China between the world wars found them ideal for keeping their subjects under control. The Chinese even discovered the way to use the machine pistol's muzzle jump to good effect: they simply turned their Mausers onto one side as they fired so that, instead of spraying bullets at the sky, the machine pistol produced a wide fan of lethal projectiles that could cover a wide horizontal arc. This simple expedient has been little used elsewhere, but in the Far East this ploy was standard practice.

During World War II the machine pistol underwent a brief flurry of revival but the advantages of the sub-machine gun proved to be too many for the relatively expensive machine pistol, and few were made. From time to time interest was revived, but it was not until after World War II that service examples were seen in any numbers. These were intended for use by the crews of armoured or 'B' vehicles who did not normally require a rifle, or who did not have the space to carry one on their normal duties. For such personnel the machine pistol seemed attractive and thus the Czech Skorpion, the Polish wz 63 and the Soviet Stechkin came upon the scene. The Stechkin may be regarded as an update of the old Mauser pistols. It has even revived the practice of using a wooden holster that doubles as a butt stock, and it retains all the old problems of muzzle climb during burst fire. At least the Skorpion and the wz 63 have bulk and some degree of compensation built into their designs.



*Above: The Heckler und Koch VP-70 is an ingenious modern attempt to produce a controllable machine pistol. Automatic fire is only possible when the holster/stock is fitted, allowing three-round bursts. The burst facility allows reasonable aimed automatic fire.*

*Below: To convert a blowback pistol to full automatic, all that is required is some means of interrupting the trigger mechanism. This home-made conversion of a Government Model Colt was captured from the IRA in Ulster. Note the extended magazine.*



Despite the problems with the machine pistol listed above, it would be as well to list its advantages. The machine pistol can have a considerable shock effect in confined areas where any sudden spray of automatic fire will hit a target. Even the knowledge that a sudden burst of fire might be imminent can be enough for the owner of such a weapon to control local events, and it is this latter fact that makes the machine pistol attractive to many police and security forces. Even so, many sub-machine guns are now small and handy enough to rival the facilities of the machine pistol, the Mini-UZI and the Ingram designs being cases in point. But no doubt the machine pistol will continue to surface in the future.

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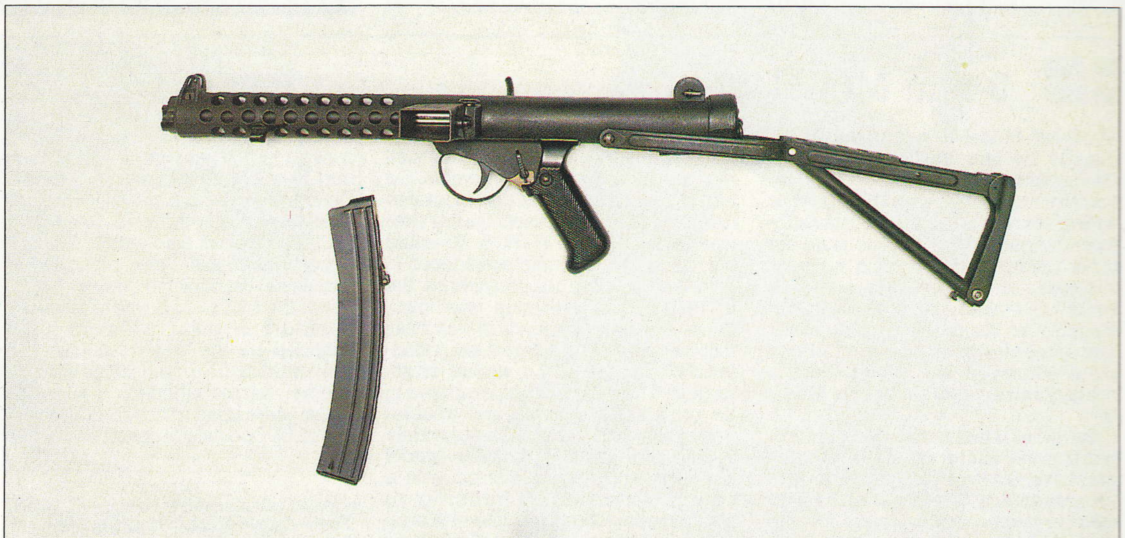
The Sterling in all its forms has proved to be a very reliable and sturdy weapon. With many armies, including the British army, the weapon is used to arm second-line personnel who do not have to carry the normal service rifle and on vehicles it can easily be folded away to take up very little stowage space. With the British Army the L2A3 will gradually be replaced by the new 5.56-mm (0.219-in) Individual Weapon (IW) starting in the near future, but the large numbers of Sterlings still around the world mean that it will still be a widely used type for many years to come.

### Specification

**L2A3**

**Calibre:** 9 mm (0.354 in) Parabellum
**Weight:** loaded 3.47 kg (7.65 lb)
**Length:** with stock extended 690 mm (27.16 in) and with stock folded 483 mm (19 in)
**Length of barrel:** 198 mm (7.8 in)
**Muzzle velocity:** 390 m (1,280 ft) per second
**Cyclic rate of fire:** 550 rpm
**Magazine:** 10- or 34-round



*Replacing the ubiquitous Sten in British Army service, the Sterling L2A3 9-mm sub-machine gun has been sold in over 90 countries, and has proved effective and reliable under the most extreme of weather conditions, ranging from Arctic cold to jungle heat and humidity.*

AUSTRALIA

# 9-mm F1

During World War II a Lieutenant Owen invented the sub-machine gun that still bears his name, and this weapon was used by Australian soldiers during World War II and for many years after it. One of the most recognizable features of the **Owen** sub-machine gun was the vertical magazine, a feature with no particular merit or demerit but one that the Australians found very much to their liking. Thus when the Australian army began searching for a new design to replace the old and worn Owens, it was not averse to choosing a design with an overhead vertical magazine.

Before selecting the design now known as the **F1**, the Australians investigated a number of experimental weapons that rejoiced in such names as 'Kokoda' and the 'MCEM'. Some of these experimental designs had some advanced features but were generally regarded as not being 'soldier-proof' enough to suit Australian conditions. But in 1962 a design known as the **X3** was selected for production, and this became the F1. The predilections of the Australian military were very evident, for the F1 has a vertical magazine but in order to allow a certain amount of interchangeability with other weapons the magazine is now curved and identical to that of the British Sterling and the Canadian C1.

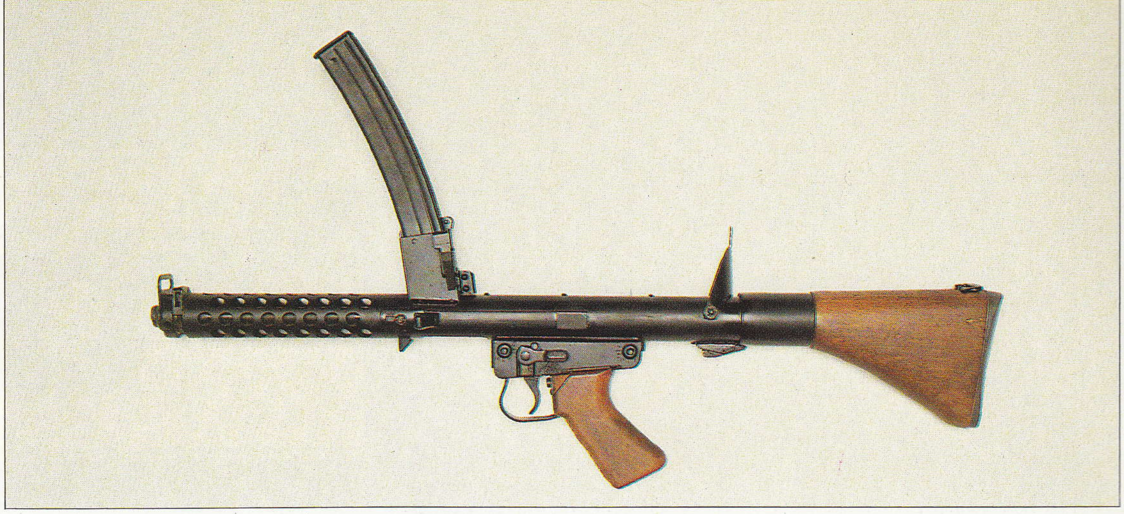
This interchangeability factor is also evident in several other features of the F1. The pistol grip is the same as that used on the L1A1 7.62-mm (0.3-in) NATO rifle, and the bayonet is another Sterling component. In fact it is tempting to regard the F1 as an Australian Sterling but there are too many differences to support such a claim. The F1 uses a simple 'straight-through' design with the butt fixed in line with the tubular receiver, and the pistol group is arranged differently from that of the Sterling. The overhead magazine does produce one difficulty, namely sighting. In action deliberate aiming is not common but has to be taken into account, so a form of offset sighting system had to be introduced. On the F1 this is done simply by using an offset leaf sight (folding down onto the tubular receiver) allied with a fixed offset foresight. The F1 does have one rather unusual safety built into the design which is not common but yet is simple and effective: on a short-barrelled weapon it is often too easy to place the forward grip over the muzzle or too close to it for safety, but on the F1 a simple sling swivel bracket prevents the hand from getting too close to the muzzle.

The F1 has some other simple but effective design features. One is the cocking handle, which exactly duplicates the position and action of its counterpart on the L1A1 standard service rifle in use with the Australian forces; this handle has a cover which prevents dirt and debris getting into the action, though if enough dirt does get into the action to prevent the bolt closing the cocking handle can be latched to the bolt for the firer to force it closed in an emergency.

For all its many attributes the F1 has yet to be bought outside Australia and some of its associated territories. At one time there was talk of its being replaced by the American M16A1 rifle, but the F1 is still around and seems set for a long service career to come.

### Specification

**F1**
**Calibre:** 9 mm (0.354 in) Parabellum
**Weight:** loaded 4.3 kg (9.48 lb) with bayonet
**Length:** 714 mm (28.1 in)
**Length of barrel:** 213 mm (8.386 in)
**Muzzle velocity:** 366 m (1,200 ft) per second
**Cyclic rate of fire:** 600-640 rpm
**Magazine:** 34-round curved box



*Above: Replacing the extremely popular Owen sub-machine gun in Australian service, the F1 retains the uniquely Australian feature of a vertical top-loading magazine. The F1 is otherwise similar to the Sterling.*

*Below: Simple and effective, the F1 in its prototype X3 form performed extremely well in the Mekong Delta during the Vietnam War. Modern construction made it almost 1 kg (2.2-lb) lighter than its World War II ancestor.*

SWEDEN

# 9-mm Model 45

The 9-mm **Model 45** was produced originally by the Karl Gustav Stads Gevärsfaktori (now part of the FFV consortium) at Eskilstuna, and is thus widely known as the Carl Gustav sub-machine gun. The Model 45 is an entirely orthodox design with no frills, and uses a simple tubular receiver and barrel cover with a simple folding butt hinged onto the pistol grip assembly. The usual blowback operating principle is employed, and overall there is nothing remarkable about the Model 45.

But there is one interesting point regarding the Model 45, and that is the magazine. On many sub-machine guns the magazine is usually one of the most trouble-prone components, for the magazine relies upon simple spring pressure to push the rounds towards the receiver, whence they are fed into the firing system. It is all too easy for rounds to become misaligned or forced together and the result is then a misfeed or jam, and these can happen at inopportune moments in combat. On the original Model 45 the magazine used was that once used on the pre-war Suomi Model 37-39, a 50-round magazine that was then considered to be one of the best in use anywhere. But in 1948 a new magazine was introduced that held 36 rounds in twin rows that were carefully tapered into a single row by the use of a wedge cross-section. This new magazine proved to be remarkably reliable and trouble-free in use, and was soon being widely copied elsewhere. Production Model 45s were soon being offered with a revised magazine housing to accommodate both the Suomi magazine and the new wedge-shaped magazine, and this version was known as the **Model 45/B**. Later production models made provision for the wedge-shaped magazine only.

The Model 45 and Model 45/B became one of Sweden's few major export weapons. Numbers were sold to Denmark and some other nations such as Eire. Egypt produced the Model 45/B as the **'Port Said'** under licence. Copies have also been produced in Indonesia. Perhaps the oddest service use of the Model 45/B was in Vietnam. Numbers of these weapons were obtained by the American CIA and converted in the United States to take a special barrel allied to a silencer. These were used in action in Vietnam by the US Special Forces on undercov-

*The 9-mm Model 45 is generally known as the Carl Gustav, after its manufacturer. Conventional in design and operation, it has been in production since 1945 and has been exported widely.*

er missions. According to most reports the silencers were not particularly effective and they were not retained in use for long.

Numerous accessories have been produced for the Model 45, one of the oddest being a special muzzle attachment that doubles as a blank firing device or a short-range target training device. The attachment is used together with special plastic bullets which are shredded into pieces as they leave the muzzle for safety. These bullets generate enough gas pressure to operate the mechanism and if required enough pressure is available to project a steel ball from the attachment itself. This reusable steel ball can thus be used for short-range target practice.

### Specification
**Model 45/B**
**Calibre:** 9 mm (0.354 in) M39B Parabellum
**Weight:** loaded 4.2 kg (9.25 lb)
**Length:** with stock extended 808 mm (31.8 in) and with stock folded 551 mm (21.7 in)
**Length of barrel:** 213 mm (8.385 in)
**Muzzle velocity:** 365 m (1,198 ft) per second
**Cyclic rate of fire:** 550-600 rpm
**Magazine:** 36-round box

*Used by many countries, including Egypt (in the 1967 war with Israel) and the USA (in a silenced version by special forces in Vietnam), the Carl Gustav remains in large-scale service with the Swedish forces.*

FRANCE

## 9-mm MAT 49

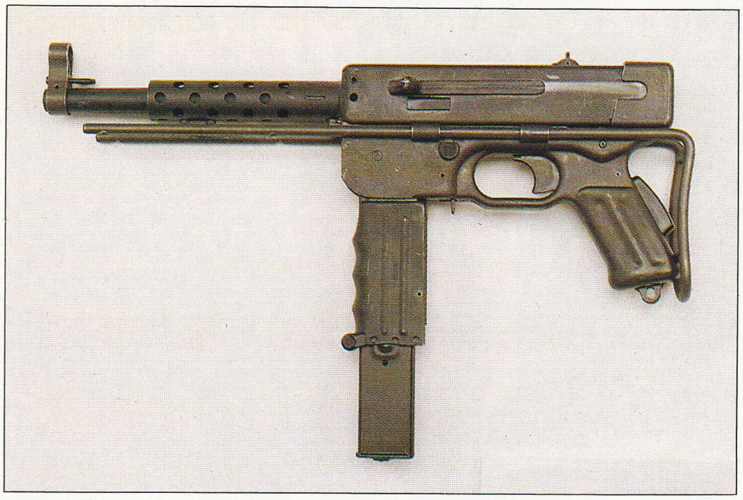
Immediately after 1945 the French armed forces were armed with a variety of sub-machine guns, some of them dating from before the war and others were coming from the United States and the United Kingdom. While the weapons were serviceable enough, the range of ammunition calibres and types was considered to be too wide, and after a selection process it was decided to standardize on the 9-mm Parabellum round for future developments. A new sub-machine gun of French origins was requested, and three arsenals responded with new designs. That of the Manufacture d'Armes de Tulle (hence MAT) was selected, and the weapon went into production in 1949.

The **MAT 49** is still in widespread service, for it is a very well made weapon. Although it uses the now-commonplace method of fabricating parts and assemblies from stampings, those in the MAT 49 were made from heavy-duty steels and are thus very strong and capable of absorbing a great deal of hard use. The design uses the blowback principle but in place of what is now described as a 'wrap-around' breech block to reduce the length of the receiver the MAT 49 has an arrangement in which a sizable portion of the breech block enters the barrel chamber to have much the same effect. No other design uses this feature, and there is another aspect of the MAT 49 which is typically French. This is the magazine housing, which can be folded forward with the magazine inserted to reduce the bulk of the weapon for stowage and transport. This feature is a carry-over from the pre-war MAS 38, and was considered so effective by the French army that it was retained in the MAT 49: a catch is depressed and the magazine housing (with a loaded magazine in place) is folded forward to lie under the barrel, while to use the weapon again the magazine is simply pulled back into place so that the housing acts as a foregrip. This foregrip is made all the more important by the fact that the MAT 49 can be fired on automatic only, so a firm grip is needed to keep the weapon under control when fired.

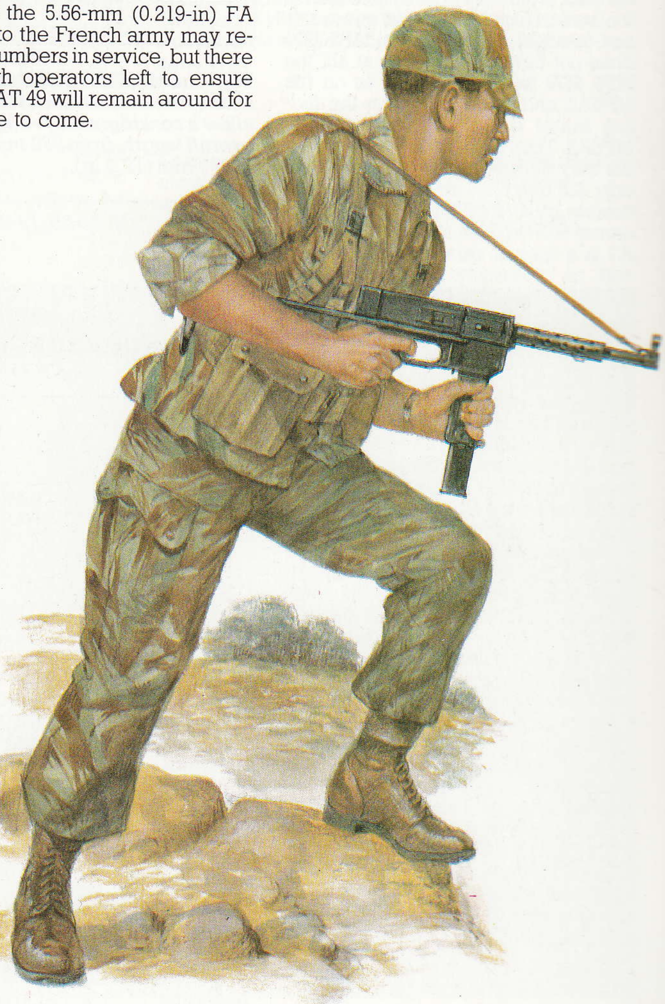
Considerable pains are taken on the MAT 49 to keep out dust and dirt, which is another historical carry-over from previous times as the MAT 49 was intended for use in the deserts of North Africa. Even when the magazine is in the forward position a flap moves into position to keep out foreign matter. If repairs or cleaning are required the weapon can be easily stripped without tools. In action a grip safety locks both the trigger mechanism and any possible forward movement of the bolt.

Overall the MAT 49 is a sturdy and foolproof weapon. It is still used by the French armed forces and by various of the French police and paramilitary units. It has also been sold abroad to many of the ex-French colonies and wherever French interests prevail. There is a chance that the recent introduction of the 5.56-mm (0.219-in) FA MAS rifle to the French army may reduce the numbers in service, but there are enough operators left to ensure that the MAT 49 will remain around for a long time to come.

### Specification
**MAT 49**
**Calibre:** 9 mm (0.354 in) Parabellum
**Weight:** loaded 4.17 kg (9.19 lb)
**Length:** with butt extended 720 mm (28.34 in) and with butt closed 460 mm (18.1 in)
**Length of barrel:** 228 mm (8.97 in)
**Muzzle velocity:** 390 m (1,280 ft) per second
**Cyclic rate of fire:** 600 rpm
**Magazine:** 20- or 32-round box



*Above: Entering French service in 1949, the 9-mm MAT 49 is an extremely rugged design, made from heavy-gauge steel stampings. The pistol grip/magazine housing hinges forward for stowage and transport.*



*Right: Designed with colonial service in mind, the MAT 49 was used extensively in Indo-China, as well as with the paratroops so notably involved in the bloody conflict in Algeria. It stood such stern tests successfully.*

WEST GERMANY

# Heckler und Koch MP5

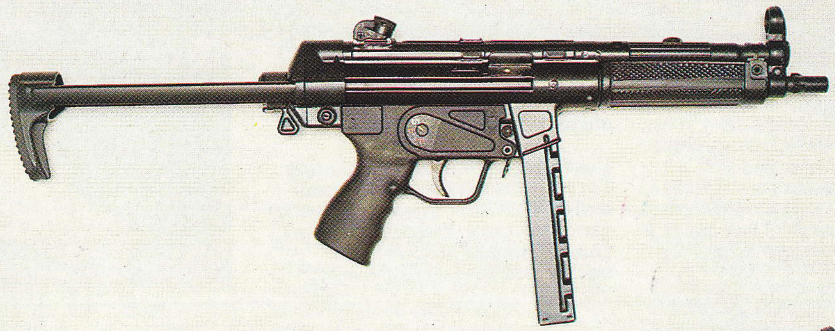
Since World War II the West German concern of Heckler und Koch has become one of Europe's largest and most important small-arms manufacturers with its success based soundly on the production of its G3 rifle, which has become a standard NATO weapon and is in use all over the world. Working from the G3 and employing its highly efficient breech-locking mechanism, the company has also produced the **Heckler und Koch MP5**, which may thus be regarded as the sub-machine gun version of the G3.

In appearance the MP5 looks very similar to the G3 although it is of course much shorter. It fires the usual 9-mm (0.354-in) × 19 Parabellum cartridge, and although this is relatively low-powered compared with the 7.62-mm (0.3-in) rifle cartridge the MP5 uses the same roller and inclined ramp locking mechanism as the G3. The complexity of this system is more than offset by its increased safety, and by the ability of the MP5 to be fired very accurately as it can fire from a closed bolt, i.e. the breech block is in the forward position when the trigger is pulled so there is no forward-moving mass to disturb the aim as there is with other sub-machine guns. The resemblance to the G3 is maintained by the use of many G3 components on the MP5.

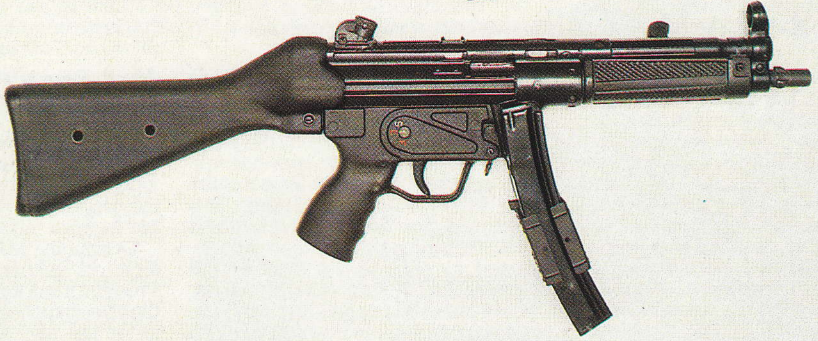
There are six main versions of the MP5. The **MP5A2** has a fixed butt stock while the **MP5A3** has a metal strut stock that can be slid forward to reduce its length. There are no fewer than three differing versions of the **MP5 SD**, which is a silenced version of the basic model for use in special or anti-terrorist warfare. The **MP5 SD1** does not have a butt stock at all; the **MP5 SD2** has a fixed butt as on the MP5A2; and the **MP5 SD3** has the sliding metal butt stock used on the MP5A3. Then there is the **MP5K** which is a very short version of the basic MP5, only 325 mm (12.8 in) long and recognizable by a small foregrip under the almost non-existent muzzle. The **MP5K A1** is a special version of this variant with no protrusions so that it can be carried under clothing or in a special holster.

In all its forms the MP5 has proved to be an excellent and reliable sub-machine gun. It is in use with some of the various West German police agencies and border guards, and numbers have been purchased by Swiss police and the Netherlands armed forces. It is known to be one of the weapons most favoured by the British SAS for close-quarter combat.

Unfortunately some MP5s have fallen into the wrong hands, usually by theft from weapon stores. The MP5 was the main weapon of the Baader-Meinhoff gang and many similar groups are known to have used the MP5 at one time or another. The MP5 has been described by one counter-insurgency authority as 'the most efficient terrorist weapon now in production', and it will no doubt feature in many future terrorist or 'freedom fighter' outrages. This future use might well involve various forms of night sight, for the MP5 has been demonstrated on numerous occasions with such devices, along with other sighting devices such as telescopic sights and other rapid-aiming systems.

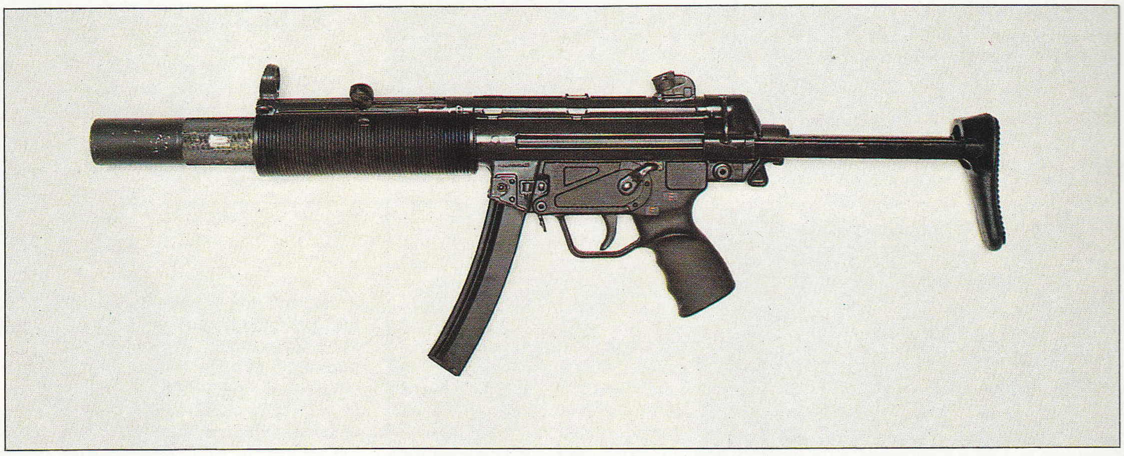


*Top: The MP5A3 is fitted with a sliding metal strut stock which can allow a considerable reduction in overall length, from 660 mm (26 in) to 490 mm (19.3 in).*

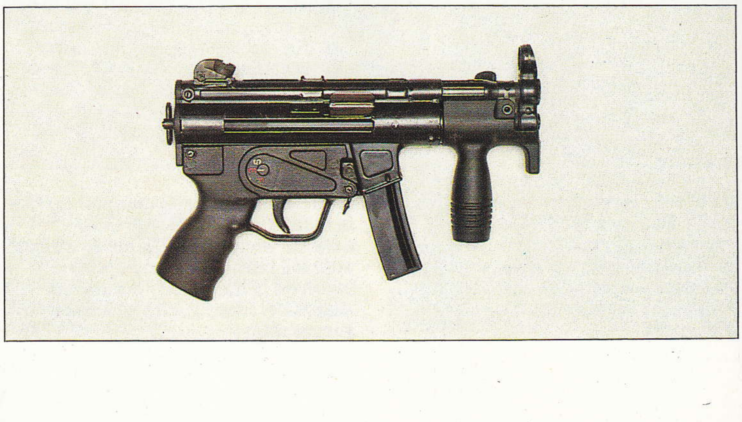


*Above: The MP5A2 is fitted with fixed plastic butt stock. After 1978 the MP5 was fitted with a curved magazine to improve cartridge feed.*

*Below: The MP5SD3 is a silenced version of the MP5A3, all parts except barrel and silencer being the same. It is used by several military and police forces around the world.*



*Right: The extremely short MP5K was introduced for use by special police and anti-terrorist squads, where weapon concealment may be essential.*



### Specification

**MP5A2**

**Calibre:** 9 mm (0.354 in) Parabellum

**Weight:** loaded 2.97 kg (6.55 lb)

**Length:** 680 mm (26.77 in)

**Length of barrel:** 225 mm (8.86 in)

**Muzzle velocity:** 330 m (1,083 ft) per second

**Cyclic rate of fire:** 800 rpm

**Magazine:** 15- or 30-round box

# Embassy Siege!

*The dazzling operation to free the Iranian embassy hostages in 1980 provided more publicity than the SAS would have wished. Foremost in the public mind were the questions, 'Where did they come from?' and 'What did they do in there?'*

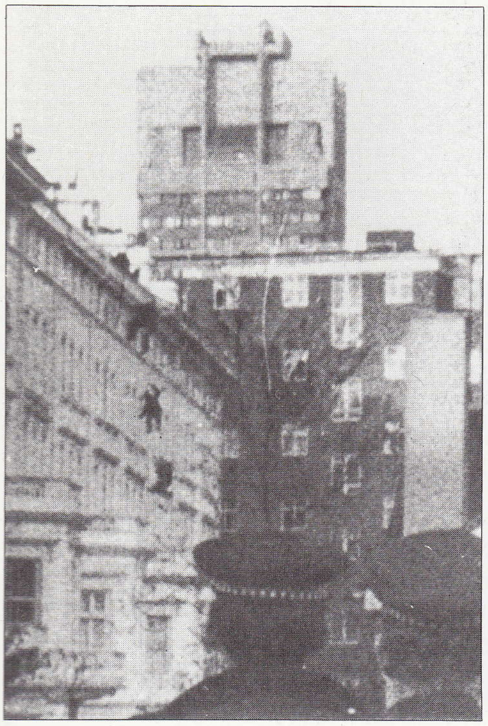
*The shooting dead of the Embassy Press Officer is a signal that time is running out for the other hostages, and the siege must be broken within minutes if more innocent lives are not to be lost. The SAS CRW (Counter-Revolutionary Warfare) troop are given the go-ahead from the highest authority.*

Even though the Special Air Service performed brilliantly during World War II, it was disbanded subsequently, together with all other special force units. This was largely because official thinking held that the SAS role could be undertaken by units detached from, say, the Paras or Royal Marines; an inherent dislike for 'private armies'; and an overall financial cutback.

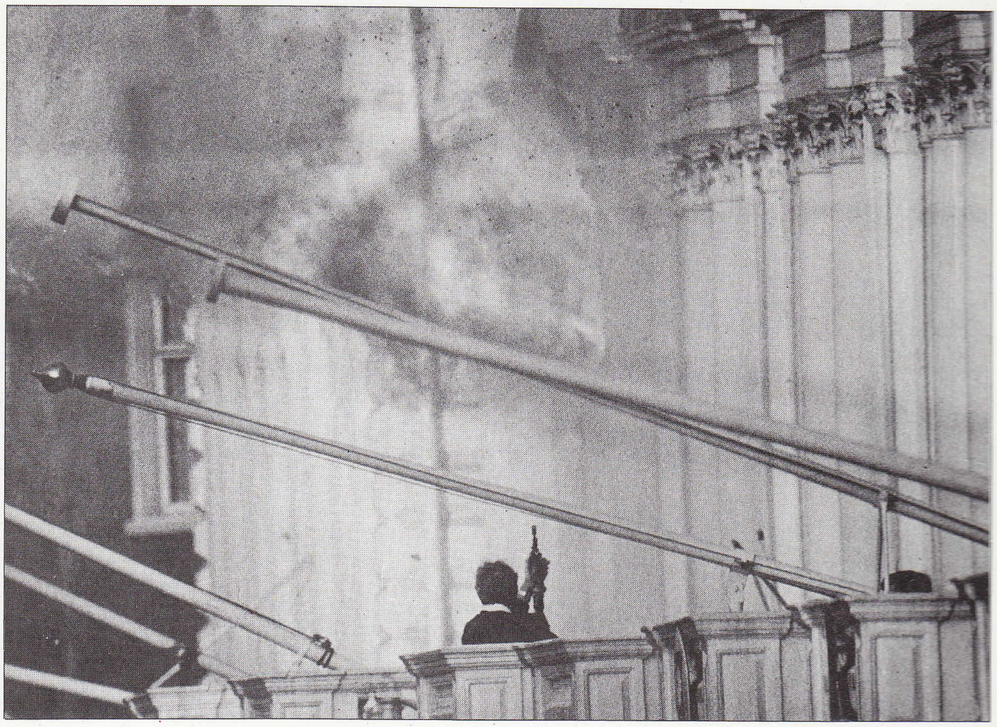
The Malayan Emergency demonstrated, however, that there were certain vital roles that only an SAS-type unit could perform, and that these roles demanded a very special type of soldier who could individually be found throughout the entire British army, but was not concentrated to any great extent in any one regiment. The SAS was thus re-formed, with a similar role to that undertaken in World War II: long-range reconnaissance, sabotage and general mayhem undertaken by basic four-man patrols. And although they were now fighting a counter-insurgency war, with all the obvious differences between that and conventional war, it was still a far cry from becoming actively involved in counter revolutionary warfare (CRW), let alone becoming the leading practitioners of its art. How the SAS achieved this role owes as much to the regiment's own initiative as it does to the demands of a drastically changing world.

The years between the end of the Malayan Emergency (1960) and the start of the Radfan campaign (1964) were relatively quiet for the SAS. Ever mindful of the need to keep their soldiers active in some way (not to mention the requirements of Whitehall and army politics), the SAS offered themselves as 'bodyguard' trainers: people whom the government of the day could loan to friendly (generally third world) governments to train their own personal protection squads. Needless to say, in most instances the offer was gratefully accepted; and as well as teaching, the SAS also learned a great deal, including the basic techniques for breaking out hostages held by a small group of fanatics.

*Simultaneously, another team is abseiling from the roof of the building at the rear, armed with smoke, flash and concussion grenades. The two teams are in the embassy within seconds of each other.*



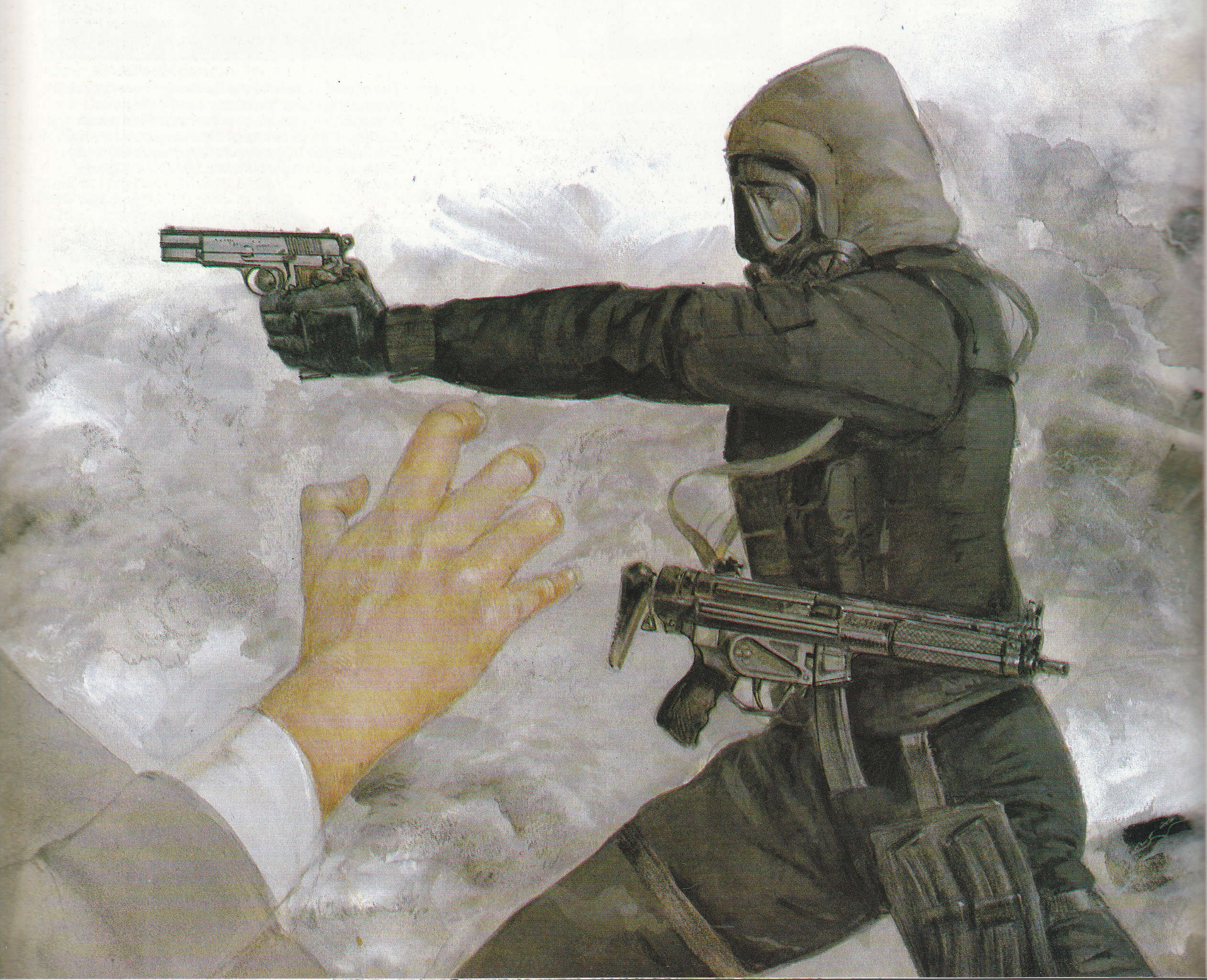
*From adjoining balconies, four black-clad figures move onto the embassy, placing explosives against the windows. Within seconds, an explosion is heard, and the SAS team is in the building.*



# Embassy Siege!

The SAS made use of these techniques on its own account during undercover operations in Aden, but the real switch from counter-insurgency to counter-revolutionary warfare occurred in 1972, the year of the Munich Olympics and the massacre of the Israeli athletes. Operational postmortems established that the German security forces had made mistakes, but that no blame could be attached because they were not trained to deal with totally ruthless, dedicated fanatics, well trained in all the terrorist arts. Putting regular police or military units against this type of enemy is rather like expecting a 'Sunday only' driver to do well at the Monaco Grand Prix. The German response was to set up GS G9; the British response was to enlarge the role of the SAS to counter the CRW threat, but still concentrating on basic 'extraction' techniques. Finally, the Mogadishu hijack brought home to politicians that the CRW threat could be countered effectively only by having in reserve a unit that was more effective and possibly even more ruthless than the terrorists themselves. It was not a new concept: the Israelis had been saying the same thing for years and moreover had proved it to be true.

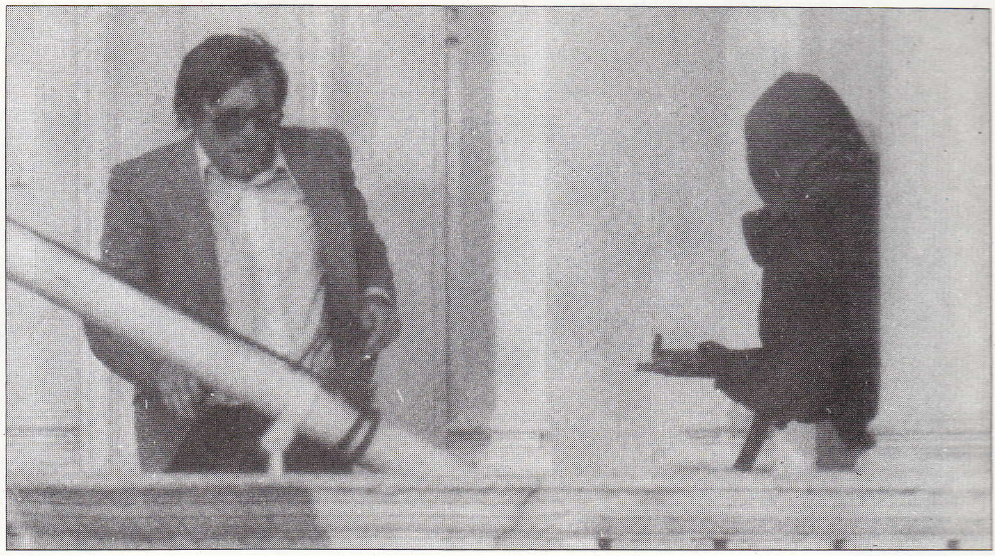
Accordingly, the SAS established a troop (codenamed 'Pagoda' after the abseiling tower in Hereford) devoted to CRW. A Close Quarter Battle house was also built, and here the troop was trained to enter a room and put two bullets into every terrorist within seconds, carefully avoiding shooting any hostages. This led to choice of weaponry. The SAS is allowed to choose its own weapons; field trials narrowed the choice of sub-machine guns to two: the 9-mm Ingram MAC 11 and the 9-mm Heckler und Koch HK MP5. Both have a nearly identical magazine capacity (32 for the MAC 11 and 30 for the MP5). But the MP5 proved more robust, and a burst fired from the MAC 11 tends to spray, increasing the chances of hitting a non-combatant. There was a further consideration, namely ricochets: there is no point in hitting a terrorist with a bullet if that bullet can exit to ricochet off a wall and kill or maim a hostage or even one's own troops. The need is for an SMG that can accurately fire a low-velocity bullet (soft-nosed for stopping power), and for this the HP5 proved ideal. Affectionately known as 'Hochlers' the SAS MP5s now boast a curved magazine designed to take the special bullets without jamming.



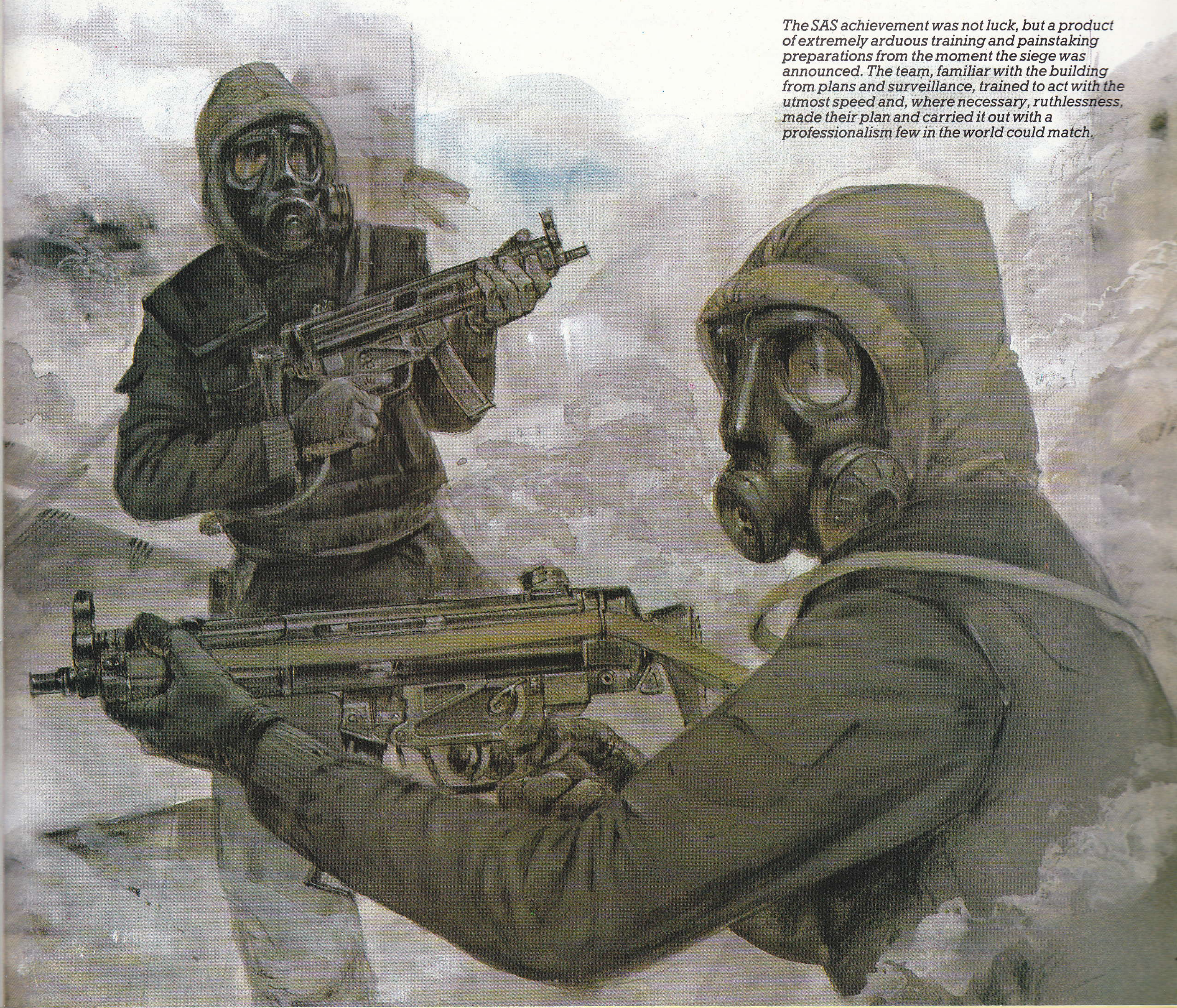
*Inside the building, the shock tactics and weapons used by the CRW teams have stunned both hostages and terrorists. The SAS troopers shoot first, rather than ask questions, as the raised hand of a terrorist is equally likely to hold a grenade as to be surrendering.*

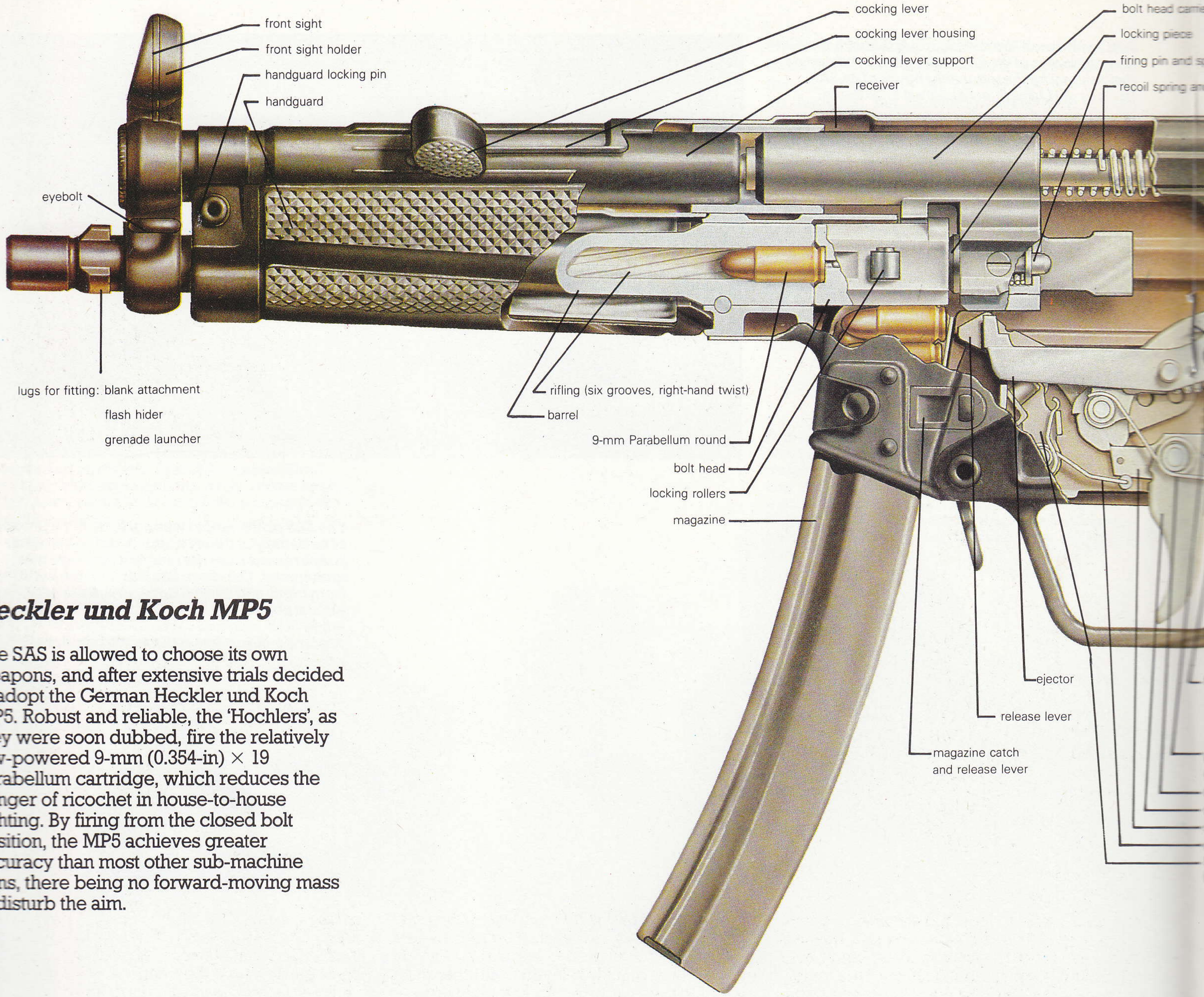
*Armed with 13-shot Browning High Power pistols and 'Hochlers' (H&K MP5 sub-machine guns) and trained to pick out targets in smoke-filled rooms and to shoot with hair's-breadth accuracy, the SAS troopers are more than a match for the terrorists. Within seconds, four are down and the hostages are being bundled out of the building at bewildering speed.*

*BBC sound man Harris, escaping through the first-floor windows of the embassy, is ordered across the balcony by the menacing figure of an SAS trooper and brusquely ordered to lie down.*



*The SAS achievement was not luck, but a product of extremely arduous training and painstaking preparations from the moment the siege was announced. The team, familiar with the building from plans and surveillance, trained to act with the utmost speed and, where necessary, ruthlessness, made their plan and carried it out with a professionalism few in the world could match.*




front sight
front sight holder
handguard locking pin
handguard
eyebolt
lugs for fitting: blank attachment
flash hider
grenade launcher
cocking lever
cocking lever housing
cocking lever support
receiver
bolt head carri
locking piece
firing pin and s
recoil spring an
rifling (six grooves, right-hand twist)
barrel
9-mm Parabellum round
bolt head
locking rollers
magazine
ejector
release lever
magazine catch
and release lever

## Heckler und Koch MP5

The SAS is allowed to choose its own weapons, and after extensive trials decided to adopt the German Heckler und Koch MP5. Robust and reliable, the 'Hochlers', as they were soon dubbed, fire the relatively low-powered 9-mm (0.354-in) × 19 Parabellum cartridge, which reduces the danger of ricochet in house-to-house fighting. By firing from the closed bolt position, the MP5 achieves greater accuracy than most other sub-machine guns, there being no forward-moving mass to disturb the aim.

That the seizure of the Iranian embassy in London during 1980 was inspired by the Iraqi government in order to embarrass Tehran is beyond a shadow of doubt. What is forgotten is that the terrorists were told that London had been chosen as a target because, amongst other considerations, the London police are very kind and will not kill you. (It does seem that the image of the friendly British 'bobby' attracts all sorts of tourists to these shores!) But while such a comment shows a certain amount of cynicism on the part of the man who made it (as well as a degree of naivety on the part of the men who believed it), it also indicates that terrorists usually operate only where they think they can get away with it: there is reduced value in mounting an operation where all of the objectives are achieved and most of the participants are killed. Aside from anything else, it makes recruiting that much harder. However, this was to be the first time that the SAS CRW 'Pagoda' troop would be seen in action in its own country. But it was not just the SAS: for both political and operational reasons, the SAS cannot be seen to be the sole counter force available. First, the maintenance of the rule of law is and must remain the responsibility of the police; second, there is an obvious manpower problem; and third, 'private armies' are still unpopular with large sections of the public, even though the SAS is by no stretch of the imagination 'private'.

### Embassy siege operational timetable

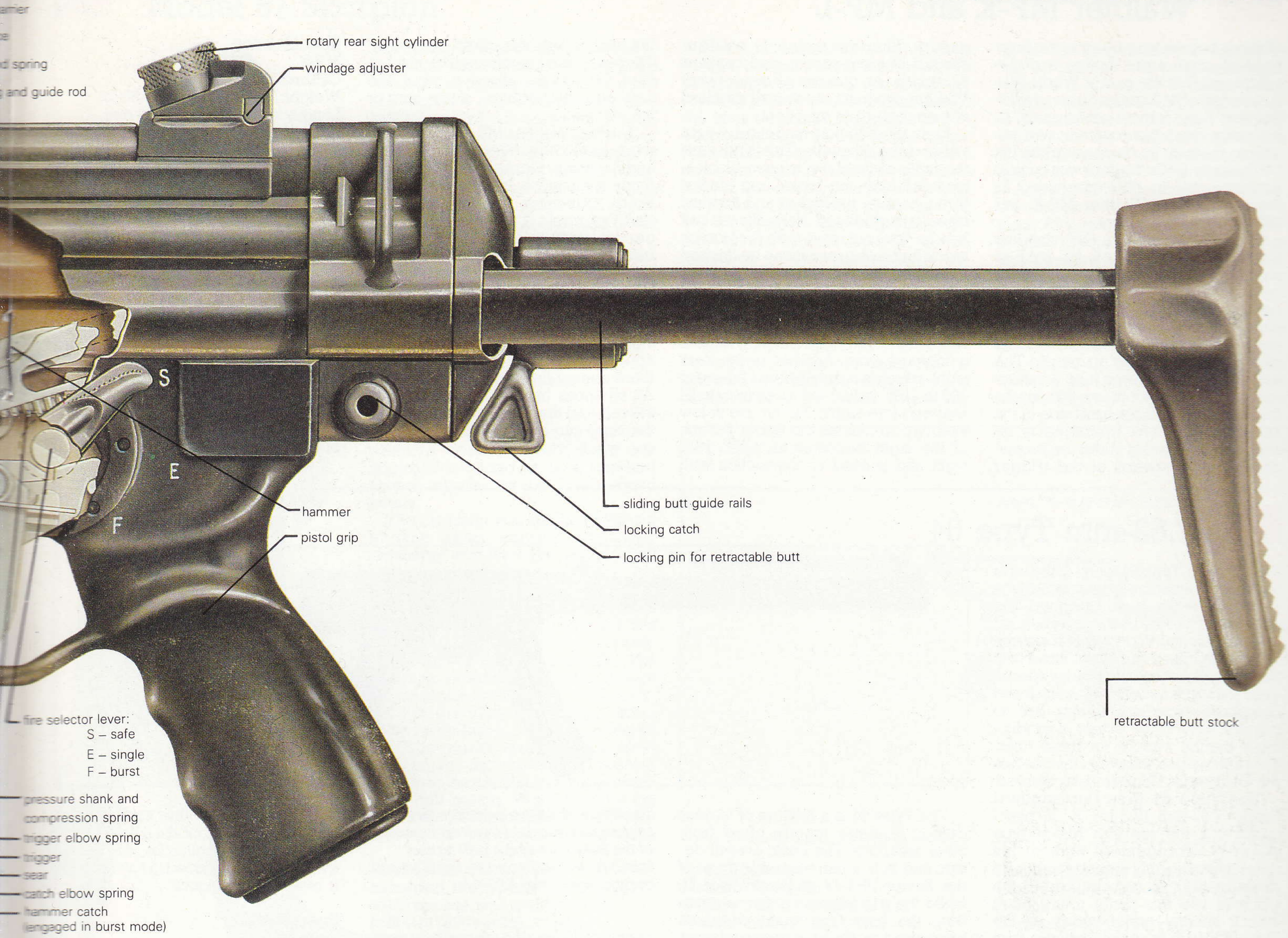
*Day 1 (Wednesday 30 April)*

11.32: Iranian Embassy seized by Moslem terrorist group.

15.00: SAS advance team on site. Though used as a last-resort force, the SAS is not called in at the last minute, but was (and still is) used in assessing the threat and planning countermeasures from the outset.

*Day 2 (Thursday 1 May)*

10.00: An official denial of SAS involvement is issued. This is not so much to mislead the public as to mislead the terrorists; while some terrorists may surrender the moment they know that the SAS is involved, others are just as likely to panic and kill everyone they can. From this day on, extensive monitoring and surveillance, using the latest electronic techniques, is started. Luckily, one of the houses next to the embassy is vacant, and from here two types of probes are inserted through the walls, under the direction of Scotland Yard's C7, which has operational control of the latest high-technology surveillance devices. The first type of probe is a simple microphone, the second a more elaborate 'borescope'. This latter is a British invention, developed by Keymed Industrial, and uses fibre optics to 'see' through walls and other solid objects. Originally developed for medical and industrial purposes, its value in CRW (and indeed in general crime prevention) soon became obvious. First, a tiny hole is bored through a wall; then a fibre optical lense is inserted to provide (either on a TV monitor or direct to the naked eye) wide angle or close-up pictures of the next door room. The borescope



can also be used to look inside suspect letters, parcels and even petrol tanks; in this instance it establishes where the hostages are being kept and provides visual identification of the terrorists themselves, and the weapons they are using.

*Day 3 to 5 (Friday 2 May to Sunday 4 May)*

Negotiations continue with the terrorists. The SAS refines its battle plan. Towards the end of this period, outside noise (low-flying aircraft, road drills etc.) are brought into use: the reasoning is that if the SAS does go in, it will be under cover of such noises, and that it is better to get the terrorists used to them now.

*Day 6 (Monday 5 May)*

Negotiations have broken down. Surveillance indicates that the terrorists are likely to start shooting their hostages, as indeed they do. The decision is taken that while the death of one hostage (non-British) can be tolerated, the threat or implementation of any more murders will mean an SAS attack. In particular, the SAS must clear and secure the first floor.

19.23: At the front of the building, a four-man team blows out the armour-plated windows, throws in stun grenades and enters the room. Moving past one of the hostages taking cover on the floor, the team finds PC Trevor Lock (a hostage from the beginning) grappling on the ground with one of the terrorists. One SAS soldier shoots the gunman, and PC Lock tells him that there are now six terrorists left in the building. 'Room clear. PC confirms six terrorists,' shouts the SAS soldier to his mates, and this information is quickly relayed to all other members of the attack force. An assault is ordered on the ambassador's office; an armed terrorist is driven back inside the office by a controlled burst from an HP5; three soldiers following up discover him lying on a sofa, pointing a gun in their direction; three more bursts and he is dead, spare ammunition falling from his hand in his death throes. Meanwhile, another assault group has abseiled down the rear of the building. One of this group is left dangling as his equipment jams: he orders the men still on the roof to cut the rope, and lands on a second-floor balcony. Bursting through the window, he makes his way through the telex room (where he notices the body of another terrorist). A group of hostages and two men separate form the hostages are huddled together on the floor. He asks them who they are in Arabic, and they reply that they are students. Calling for assistance, he orders them searched. The search reveals a hidden revolver and ammunition, and the terrorist with the revolver snatches his hands to the centre of his body – he could, probably is, going for a grenade, but a burst from an HP5 silences him forever. The hostages are now taken rather than led to safety as there is no way of knowing if a terrorist is hiding amongst them. They are literally thrown from SAS soldier to SAS soldier down the stairs and, their hands quickly secured, laid down in the back garden until they can be identified and until all the terrorists are discovered.

19.40: Within 17 minutes, all the hostages have been identified. All the terrorists have been killed, except one who disguised himself as a hostage and made no threatening move when he was discovered.

## The lesson

Should you ever decide to take over an embassy and the SAS comes storming in, do not fight back. Get rid of as many clothes as you can to show you are not carrying a concealed weapon. If possible, tie your own hands behind your back, and lie on the floor and keep very, very still. You just might get out alive, which is more than did the murdered hostages at the Iranian embassy, or the Munich athletes, or the women and children at Lod airport.

Better still, decide to make your protest some other way, because unless you are very lucky and incredibly skilled, when the SAS (or GS G9, or Delta Force, or if you are in the USSR the Spetsnaz) troops come storming in, you will only have about four minutes to write your will and wonder if maybe you made a mistake.

WEST GERMANY

# Walther MP-K and MP-L

Walther has for long been in the forefront of small arms design and development, but the end of World War II saw most of its facilities taken over by the new East German government, so for many years the company was unable to re-enter its chosen market. But by the early 1960s Walther was back in business, and in 1963 introduced its 9-mm (0.354-in) **Walther MP-K** and **MP-L** sub-machine guns.

The MP-K and MP-L (MP standing for *Maschinenpistole*, K for *kurz* or short, and L for *lange* or long) differ only in their barrel length. They are both well-made sub-machine guns constructed in the usual manner from steel stampings, and both use the same blowback operating principle. The butt stock is a skeleton tube arrangement, and when not in use this can be folded along the right-hand side of the receiver. The box magazine is inserted into a housing under the receiver and just forward of the trigger group. This magazine is wedge-shaped in cross-section and contains 32 rounds. As one would expect with Walther products, the overall standard of manufacture is excellent.

From the side both models present a rather deep silhouette. This is because the main mass of the breech block is mounted over the barrel and guided throughout its backward and forward travel on a guide rod. Normally the bolt handle does not move with the breech block, but if required it can be latched into the block in order to clear a stoppage. There are all manner of small detail points on these two weapons. One is that when the stock is folded forward the butt portion can be used as a forward grip. Another is the rear sight, which is normally fixed for use at 100 m (109 yards) using conventional rear and fore sights. But for use in low visibility conditions the upper portion of the sight becomes an open rear sight and is used in conjunction with the top of the fore sight protector. There is a fire selector switch just behind the trigger, allowing rapid and easy selection of 'safe', single shot or full automatic.

The first Walther MP-Ks and MP-Ls were sold to the West German navy and to some German police forces. Since then more have been sold to Brazil, Colombia, the Mexican navy and Venezuela. The types are no longer in production, but both are still being offered for sale by Walther and could be placed back in production within a short time. Some accessories have been offered with these guns. At one point the MP-K was offered with a screw-on silencer, but this was apparently not long developed and there appear to have been few takers. All weapons have provision for sling swivels and these are so arranged that the sling can be used to stabilize the gun when firing bursts.

### Specification
**MP-K**
**Calibre:** 9 mm (0.354 in)
**Weight:** loaded 3.425 kg (7.55 lb)
**Length:** with stock open 653 mm (25.7 in) and with stock folded 368 mm (14.49 in)
**Length of barrel:** 171 mm (6.73 in)
**Muzzle velocity:** 356 m (1,168 ft) per second
**Cyclic rate of fire:** 550 rpm
**Magazine:** 32-round box

### Specification
**MP-L**
**Calibre:** 9 mm (0.354 in)
**Weight:** loaded 3.625 kg (7.99 lb)
**Length:** with stock open 737 mm (29 in) and with stock folded 455 mm (17.9 in)
**Length of barrel:** 257 mm (10.12 in)
**Muzzle velocity:** 396 m (1,299 ft) per second
**Cyclic rate of fire:** 550 rpm
**Magazine:** 32-round box

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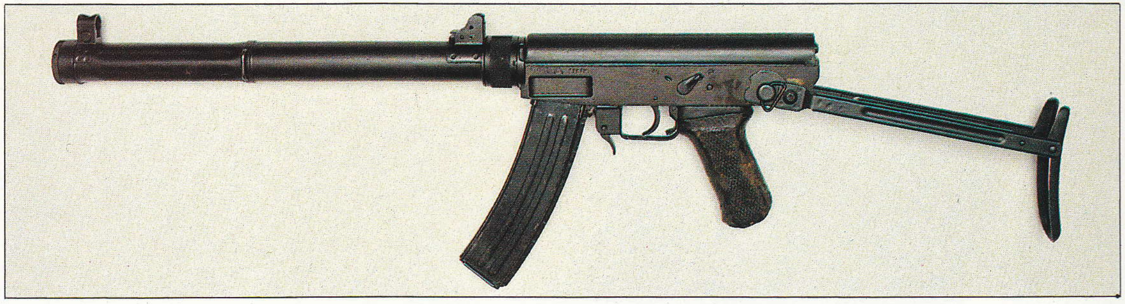
PEOPLE'S REPUBLIC OF CHINA

# 7.62-mm Type 64

The Chinese **Type 64** is one of the most unusual sub-machine guns in service today, for it has been designed and produced from the outset as a silenced weapon. During World War II several types of machine-gun were fitted with various types of suppressor for special missions (such as behind-the-lines and commando-type operations), but no country went to the extent of producing a special weapon for these roles. For reasons best known to themselves the Communist Chinese have done so.

The Type 64 fires the standard Soviet 7.62-mm (0.3-in) × 25 pistol round, but the use of a Maxim-type silencer arrangement makes this round effective only at short ranges. To make matters more complicated the Chinese use this pistol round fitted with a special bullet known as the Type P, which is slightly heavier than the normal bullet and is thus slightly more effective. As silenced weapons go the Type 64 has been tested to the point where it seems to be effective enough, but the time and trouble involved in the design and production of such a special weapon and cartridge seem wasteful to many Western experts.

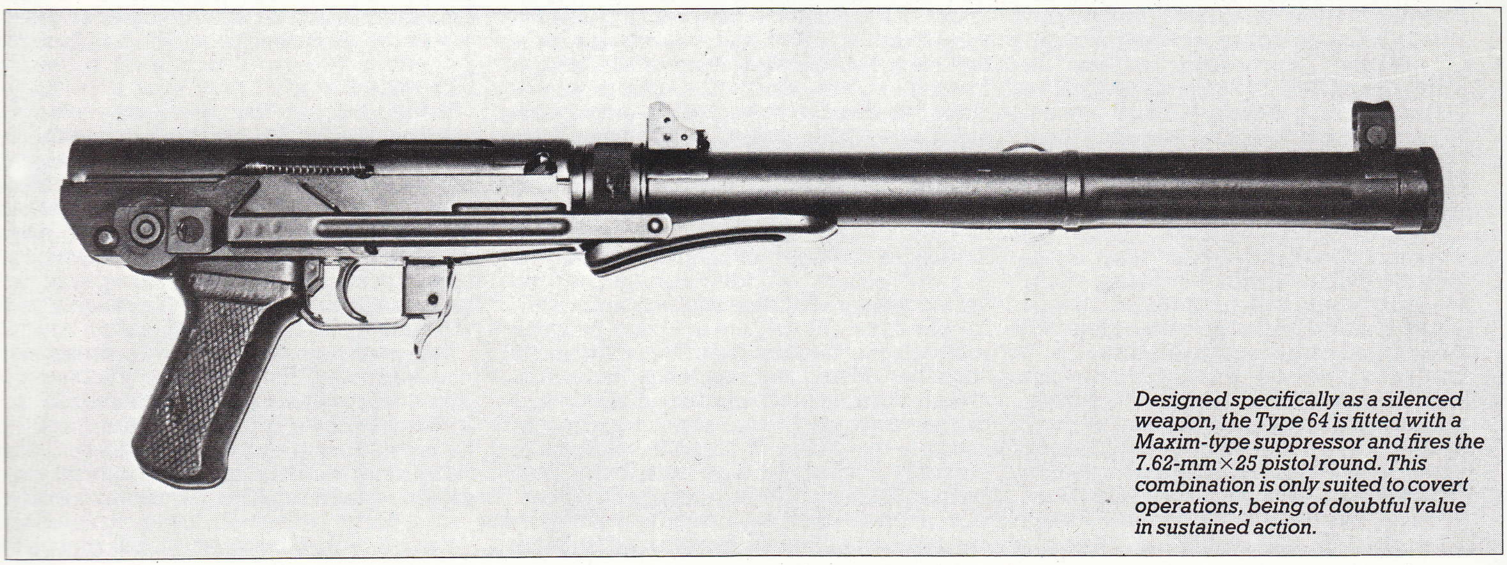


***The Type 64 uses a selective fire trigger mechanism derived from that of the Bren gun and a bolt action taken from the Type 43 – the Chinese copy of the Soviet PPS-43.***

The Type 64 is a mixture of various design features mainly lifted from other weapons. The basic overall design and bolt action resemble those of the Soviet PPS-43 of World War II, while the trigger mechanism is taken from the Bren Gun, many of which were used in China during and after World War II. The folding stock also comes from the Soviet PPS-43, while the silencer uses the well-established principles introduced by Hiram Maxim who was at one time as well known for his silencer designs as he was for his machine-guns. The barrel extends along only part of the silencer, and the last part of the barrel is perforated by a series of holes; the propellant gases exhaust through these and the muzzle into a series of baffles that continue until the muzzle of the silencer proper. This silencer also acts as a flash suppressor.

The exact operational role of this weapon with the ChiCom forces is not known with exactitude. The few examples seen in the West came mainly from Vietnam and other such Far East origins, and it is doubtful if the Type 64 was kept in production for very long or even if it was produced in any quantity. It remains an enigma.

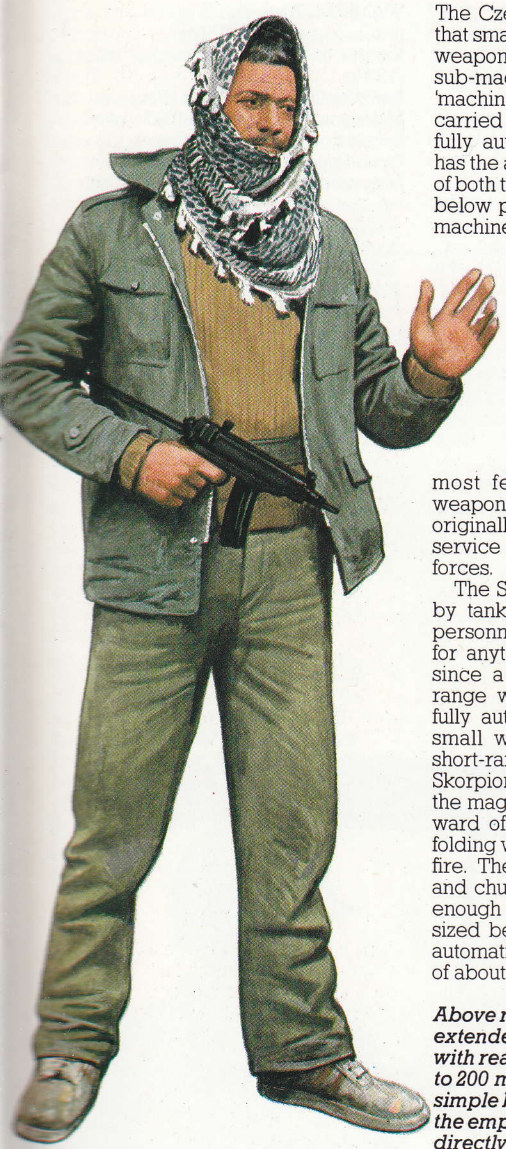
### Specification
**Type 64**
**Calibre:** 7.62 mm (0.3 in) × 25 Type P
**Weight:** empty 3.4 kg (7.495 lb)
**Length:** with stock extended 843 mm (33.19 in)
**Length of barrel:** 244 mm (9.6 in)
**Muzzle velocity:** about 313 m (1,027 ft) per second
**Cyclic rate of fire:** uncertain
**Magazine:** 20- or 30-round box



***Designed specifically as a silenced weapon, the Type 64 is fitted with a Maxim-type suppressor and fires the 7.62-mm × 25 pistol round. This combination is only suited to covert operations, being of doubtful value in sustained action.***

CZECHOSLOVAKIA

## Model 61 Skorpion



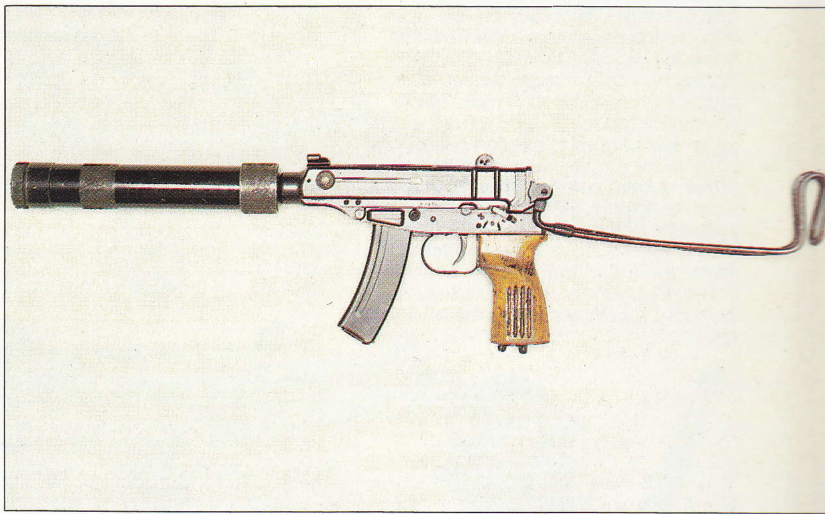
The Czech **Model 61 Skorpion** lies in that small-arms no-man's-land where a weapon that is neither a pistol or a true sub-machine gun is described as a 'machine pistol': it is small enough to be carried and fired as a pistol, but it fires fully automatically when required. It has the advantages and disadvantages of both types of weapon and is perhaps below par as both a pistol and a sub-machine gun, but it is now one of the most feared of all 'underground' weapons, despite the fact that it was originally intended to be a standard service weapon for the Czech armed forces.

The Skorpion was designed for use by tank crews, signallers and other personnel who have no normal need for anything larger than a pistol. But since a pistol is essentially a short-range weapon, the introduction of a fully automatic feature provided this small weapon with a considerable short-range firepower potential. The Skorpion resembles a pistol, though the magazine is not in the butt but forward of the trigger assembly, and a folding wire butt is provided for aimed fire. The overall appearance is short and chunky, and the weapon is small enough to be carried in a rather oversized belt holster. When fired on full automatic the weapon has a cyclic rate of about 840 rounds per minute, which makes it a formidable weapon at short ranges, but this benefit is offset by two considerations. One is that using any machine pistol on full automatic makes the weapon almost impossible to aim accurately: the muzzle forces cause the muzzle to climb and judder to such an extent that it is virtually impossible to hold the weapon still for more than an instant. The other consideration is that the Skorpion uses magazines with only 10- or 20-round capacity, and on automatic either would soon be exhausted. But while the Skorpion fires it sprays bullets in an alarming swathe and this makes it a formidable close-quarter weapon.

The Skorpion operates on the blowback principle. Single shots can be selected, and aiming is assisted by use of the folding wire butt. The basic Model 61 Skorpion fires the American 0.32-in (actual 7.65-mm) cartridge, making it the only Warsaw Pact weapon to use this round, but the **Model 63** uses the 9-mm short (0.38-in) round and the **Model 68** the 9-mm (0.354-in) Parabellum. A silenced version of the Model 61 is available.

Apart from the Czech armed forces, the Skorpion has also been sold to some African nations, but its main impact has been in the hands of guerrillas and 'freedom fighters'. The firepower impact of the Skorpion is considerable at short ranges, which suits the requirements of assassination and terror squads, so the type is now much favoured by such groups. With them it has turned up in many parts of the world from Central America to the Middle East.

***The Model 61 Skorpion is a favourite weapon of the Palestine Liberation Organization, its small size making for easy concealment.***



***Above right: Stock fully extended, the Type 61 can shoot with reasonable accuracy at up to 200 m (220 yards). It uses a simple blowback operation, but the empty case is ejected directly upwards.***

### Specification

**Model 61 Skorpion**
**Calibre:** 0.32 in (actual 7.65 mm)
**Weight:** loaded 2 kg (4.4 lb)
**Length:** with butt extended 513 mm (20.2 in) and with butt folded 269 mm (10.6 in)
**Length of barrel:** 112 mm (4.4 in)
**Muzzle velocity:** 317 m (1,040 ft) per second
**Cyclic rate of fire:** 840 rpm
**Magazine:** 10- or 20-round box

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POLAND

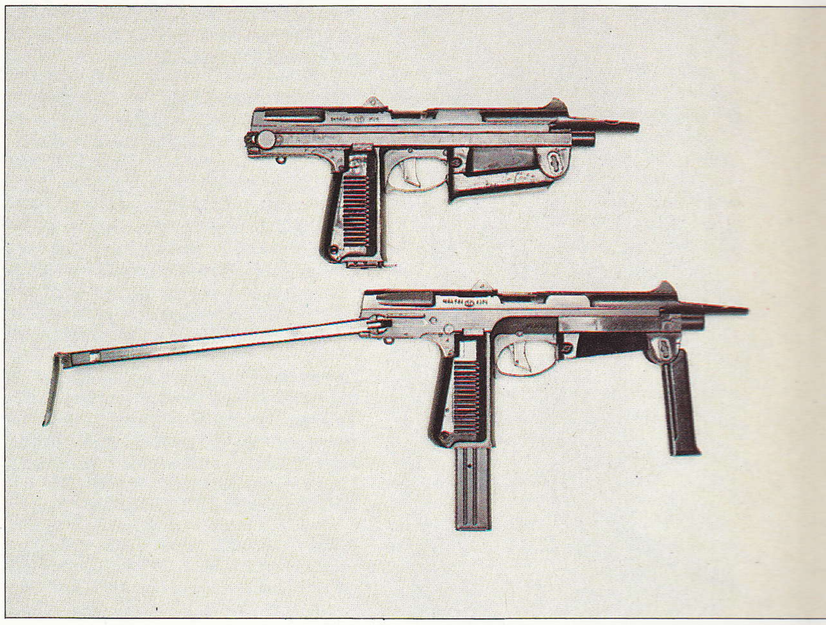
## 9-mm wz 63 (PM-63)

The 9-mm **wz 63** (*wzor*, or model) is also known as the **PM-63**, and is one of those weapons that falls into the category of machine pistol. Although only slightly larger than an orthodox pistol, it can be fired fully automatic at a cyclic rate of 600 rounds per minute. It was designed by Piotr Wilniewicz, who led a design team to produce a weapon for those elements of the Polish forces who are unable to carry a conventional weapon during their combat duties. The wz 63 is thus used by Polish tank crews, signallers and other troops such as truck drivers.

The wz 63 is rather long for a conventional pistol and is fitted with a butt that can be folded forward to lie under the barrel. When folded forward the butt either lies under the forward grip, or the butt plate can be folded down to act as a forward grip. This forward grip is essential to hold the weapon steady on automatic fire, for the wz 63 suffers from the usual difficulty of rapid and erratic muzzle movement mainly caused by the cyclic rate of fire. Some of this muzzle movement is compensated by a simple fixture on the end of the barrel which is little more than an open trough angled upwards at a slight angle to push the barrel downwards. In practice this device appears to be of marginal value. Accurate single-shot aiming is possible, but even when using the butt any deliberate aim is likely to be disturbed by the bolt moving forward as the trigger is pulled since, like most other blowback-operated weapons, the wz 63 operates from an open bolt. However its effective range using the stock extended into the shoulder is stated to be 200 m (219 yards); on automatic the range is much less.

The wz 63 may be used with either a 25- or a 40-round magazine, although some references also mention a 15-

***Although classed as a machine pistol, the wz 63 is more complex than the Skorpion and it would require a firm hand indeed to fire 9-mm × 18 cartridges on full automatic. It is perhaps no accident that the handbook only shows it deployed for two-handed use.***



## 9-mm wz 63 (PM-63) (continued)

round magazine. It is normally issued together with a special holster and a pouch holding three magazines and a cleaning kit. A sling may also be supplied.

The round fired by the wz 63 is the 9-mm (0.354-in) × 18 Makarov cartridge, which differs in several ways from the usual 9-mm (0.354-in) × 19 Parabellum round. It provides the wz 63 with a considerable striking capability at short combat ranges but as stated before the ability of any machine pistol to remain on target for more than a fleeting second is unlikely. Instead the wz 63 produces a 'spray' effect which can be of considerable value in combat, but even this effect is reduced by the magazine capacity.

The wz 63 is still used by the Polish troops for which it was designed, and the type is now extensively used by Polish police and security units. Outside Poland the wz 63 appears to be little used, though numbers of these weapons have turned up in the Middle East and have been observed by several of the organizations involved in the civil war in Lebanon.

### Specification

**wz 63**
**Calibre:** 9 mm (0.354 in) Makarov
**Weight:** with empty 32-round magazine 1.8 kg (3.97 lb)
**Length:** with stock retracted 333 mm (13.1 in)
**Length of barrel:** 152 mm (6 in)
**Muzzle velocity:** 323 m (1,060 ft) per second
**Cyclic rate of fire:** 600 rpm
**Magazine:** 25- or 40-round box; also references to 15-round box

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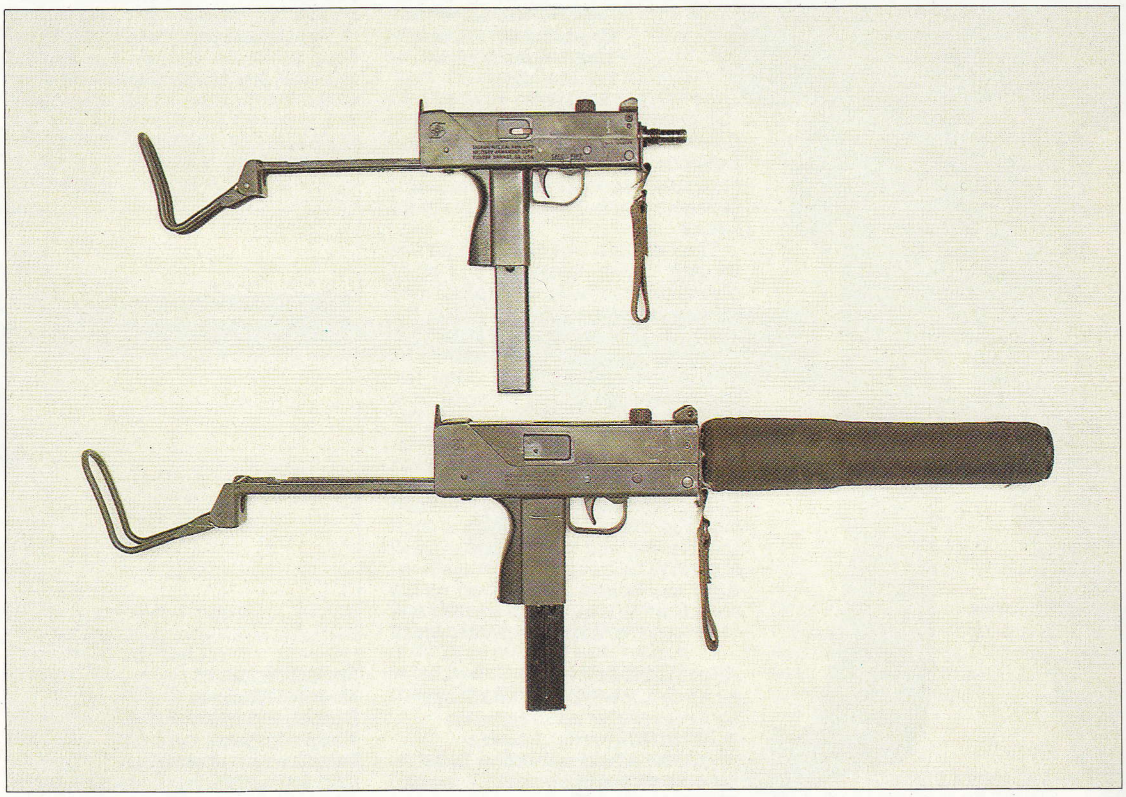
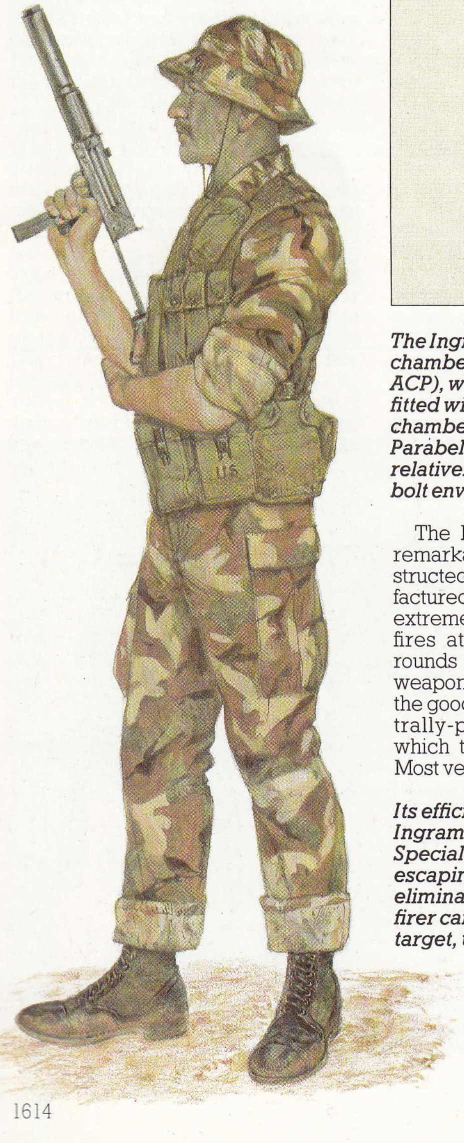
USA

# Ingram Model 10

There have been few weapons in recent years that have 'enjoyed' the attentions of the Press and Hollywood to such an extent as that lavished on the Ingram sub-machine guns. Gordon B. Ingram had designed a whole string of sub-machine guns before he produced his **Ingram Model 10**, which was originally intended to be used with the Sionics Company suppressor. First produced during the mid-1960s, the little Ingram Model 10 soon attracted a great deal of public attention because of its rate of fire, supposedly high enough to 'saw a body in half', coupled with the highly efficient sound suppressor. Hollywood and television films added their dramatic commentaries and the Ingram Model 10 soon became as widely known as the old Thompson sub-machine guns of the 1920s.



*The Ingram Model 11 (top) is chambered for 9-mm Short (.380 ACP), while the Model 10 (below), fitted with a suppressor, can be chambered for either 9-mm Parabellum or .45 ACP. Both are relatively well balanced due to the bolt enveloping the breech.*



*Its efficient suppressor makes the Ingram a handy weapon for the Special Forces. By reducing the escaping gas to subsonic speed and eliminating flash, the position of the firer can remain a mystery to the target, until hopefully it is too late.*

The Ingram Model 10 is indeed a remarkable little weapon. It is constructed from sheet metal but manufactured to a very high standard and extremely robust. This has to be, for it fires at a cyclic rate of over 1,000 rounds per minute, yet control of the weapon is still relatively easy thanks to the good balance imparted by the centrally-placed pistol group through which the box magazine is inserted. Most versions have a folding metal butt but this may be removed, and many weapons not fitted with the long tubular suppressor use a forward webbing hand-strap as a rudimentary foregrip. The muzzle on most models is threaded to accommodate the suppressor, and when fitted this is covered with a heat-resistant canvas or plastic webbing to allow it to be used as a forward grip. The cocking handle is on top of the slab-sided receiver and when turned through 90° acts as a safety lock. As this handle is slotted for sighting purposes the firer can soon notice if this safety is applied, and there is a normal trigger safety as well.

The Model 10 may be encountered chambered for either the well-known 11.43-mm (0.45-in) cartridge or the more usual 9-mm (0.354-in) Parabellum. The latter round may also be used on the smaller **Model 11** which is normally chambered for the less powerful 9-mm Short (.380 ACP). In all these calibres the Ingram is a dreadfully efficient weapon and not surprisingly it has been sold widely to customers ranging from paramilitary forces to bodyguard and security agencies. Military sales on any large scale have been few but several nations have acquired numbers for 'testing and evaluation'. The British SAS is known to have obtained a small quantity for testing. Sales have not been encouraged by the fact that the ownership and manufacturing rights have changed hands several times, but both the Model 10 and Model 11 are now back in production and selling well. In order to keep sales rolling several variants have been made. Versions firing single-shot only and without the folding butt are available, and at one point a long-barrelled version was produced, though only in limited numbers as the type did not find a ready market.

In the meantime Ingrams will be found in countries as diverse as Yugoslavia, Israel and Argentina. Many have been sold to the Central and South American nations.

### Specification

**Model 10** (0.45-in model)
**Calibre:** 11.43 mm (0.45 in)
**Weight:** loaded with 30-round magazine 3.818 kg (8.4 lb)
**Length:** with stock extended 548 mm (21.575 in) and with stock folded 269 mm (10.59 in)
**Length of barrel:** 146 mm (5.75 in)
**Length of suppressor:** 291 mm (11.46 in)
**Muzzle velocity:** 280 m (918 ft) per second
**Cyclic rate of fire:** 1,145 rpm
**Magazine:** 30-round box

ISRAEL

## 9-mm UZI

Once Israel had fought its War of Independence in 1948 the new nation had some breathing space in which to arm itself for any future conflict. Sub-machine guns were high on the list of priorities, for the new Israeli army was then equipped with all manner of old weapons varying from Sten guns to Czech weapons. The Czech weapons attracted the close attention of one Lieutenant Uziel Gail, for they had the advantage that their breech blocks or bolts were 'wrapped around' the barrel, so placing the mass of the bolt well forward around the barrel on firing and allowing a short weapon to have a relatively long barrel. The Czech weapons concerned were of the vz 23 series, and using these Gail was able to design and develop his own design that was more suitable to the manufacturing methods then available in relatively undeveloped Israel. He came up with a weapon that is now universally known as the **UZI** after its designer.

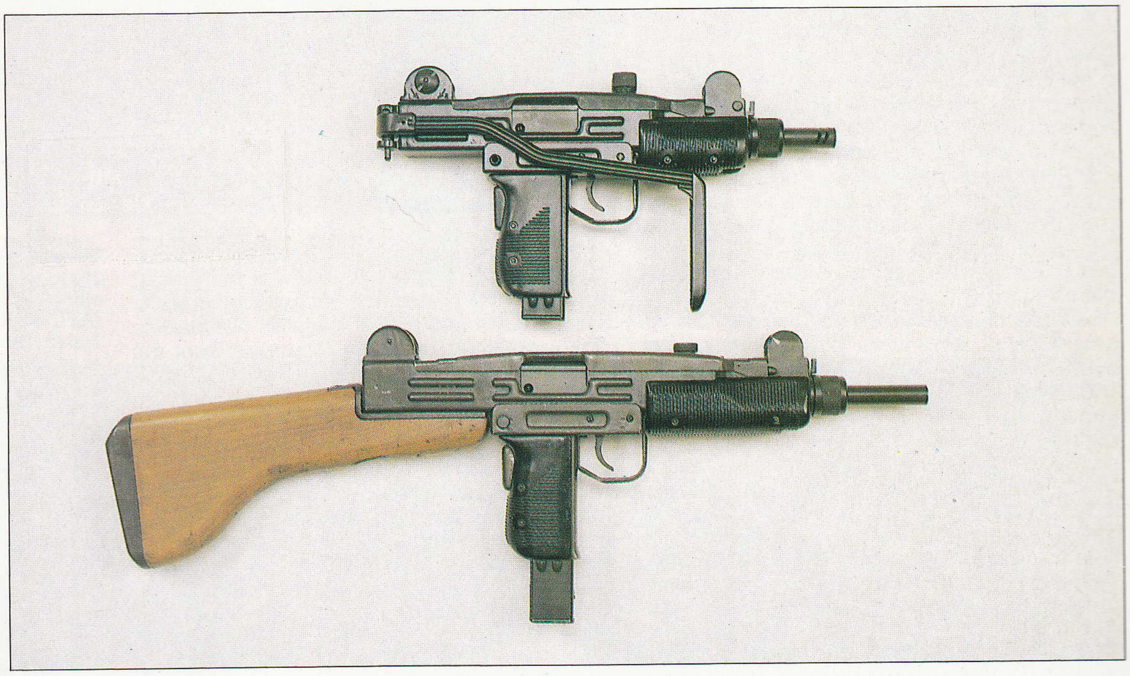
The UZI is made largely from simple pressings held in place by spot welds or other welding. The main body is made from a single sheet of heavy gauge sheet steel with grooves pressed into the sides to take any dust, dirt or sand that might get into the works. This simple feature makes the UZI capable of operation under even the most arduous conditions, a fact that has been proved on many occasions. The overall cross-section of the main body is rectangular with the barrel secured to the body by a large nut just behind the muzzle. The trigger group is situated centrally, and the box magazine is inserted through the pistol grip, which makes reloading very easy in the dark for 'hand will naturally find hand'. The normal combat magazine holds 32 rounds, but a common practice is to join two magazines together using a cross-over clip or even tape to allow rapid changing. A grip safety is incorporated into the pistol grip.

The UZI is now virtually one of the symbols of Israeli military prowess, but Israel is not the only nation to use the type. The West Germans also use the UZI, which they know as the **MP2**; this model was produced under licence by FN in Belgium. Numerous other nations also use the UZI. It is part of legend that the President of the United States is always accompanied by bodyguards carrying UZIs in specially fitted brief cases, and many other security agencies and police forces use the UZI.

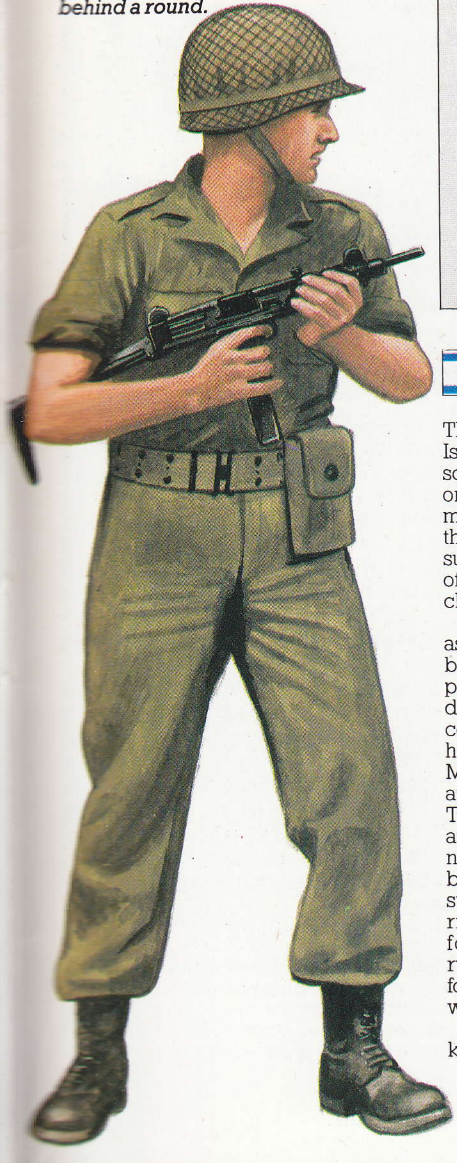
The UZI may be encountered with either a sturdy fixed wooden butt stock or a metal stock that can be folded forward under the main body with the butt plate still available to assist in steadying automatic fire. The UZI can be used to fire single-shot by use of a change lever just above the pistol butt.

### Specification

**UZI (with wooden stock)**
**Calibre:** 9 mm (0.354 in) Parabellum
**Weight:** loaded with 32-round magazine 4.1 kg (9 lb)
**Length:** 650 mm (25.59 in)
**Length of barrel:** 260 mm (10.24 in)
**Muzzle velocity:** 400 m (1,312 ft) per second
**Cyclic rate of fire:** 600 rpm
**Magazine:** 25- or 32-round box



*Right: The UZI (with wooden stock) and the Mini-UZI. The Mini-UZI is just 36-cm (14-in) long with its stock folded, making for easy concealment under ordinary clothing. The UZI is a design of great simplicity and is famous for reliability in awkward conditions.*



*Below: This Israeli carries the UZI fitted with metal folding stock. In addition to a grip safety, the UZI features a ratchet on the cocking handle to prevent accidental firing if the user's hand slips off the handle after the breech block has passed behind a round.*

ISRAEL

## 9-mm Mini-UZI

The **Mini-UZI** has been developed by Israel Military Industries from the full-scale UZI and differs from the original only in dimensions and weights. A few modifications have been introduced to the basic design, but these are only superficial while the operating system of the original has been retained unchanged.

The Mini-UZI has been developed as a weapon suitable for concealment by police and security personnel. This prompted an overall decrease in dimensions, and to improve this concealment a smaller 20-round magazine has been introduced, although the Mini-UZI can still use the existing 25- and 32-round magazines if required. The UZI parentage is immediately apparent but one change that can be noted is that the normal folding metal butt has been replaced by a single-strut butt stock that folds along the right-hand side of the body. When folded the butt plate acts as a rudimentary foregrip. but the normal foregrip is a plastic section just forward of the trigger group.

To date the Mini-UZI has been marketed as suitable for police and security agencies but it is bound to attract the attentions of various military organizations for special missions. It would make an ideal commando-type weapon where light weight is required, and it must be stressed that although the Mini-UZI is a scaled-down version of the original it still uses the potent 9-mm (0.354-in) × 19 Parabellum round. As the weapon is lighter than the full-size version its breech block is lighter too, and this provides a cyclic rate of fire of 950 rounds per minute, which is much higher than on the original.

The Mini-UZI is being marketed in the United States carried in a specially-fitted brief case together with spare magazines and a small cleaning and spares kit. It has already been suggested that some form of silencer could be fitted to the muzzle.

There are also some UZIs other than the standard version and the Mini-UZI. One is the semi-automatic **Carbine UZI** which has been produced to conform with the legal requirements of some American states that require non-automatic weapons only to be held by their inhabitants. In order to prevent the rapid conversion of semi-automatic versions of automatic weapons they call for such semi-automatic versions to have barrels at least 406 mm (16 in) long. Thus the standard UZI may be seen with a long barrel protruding from the body and this denotes that the weapon can be fired single-shot only.

Another UZI variant that has only recently been introduced is the UZI pistol. Although really outside the scope of this survey it is still recognizable as an UZI. It can be fired single-shot only and there is no form of butt stock.

### Specification

**UZI**
**Calibre:** 9 mm (0.354 in) Parabellum
**Weight:** loaded with 20-round magazine 3.11 kg (6.85 lb)
**Length:** with stock extended 600 mm (23.62 in) and with stock folded 360 mm (14.17 in)
**Length of barrel:** 197 mm (7.75 in)
**Muzzle velocity:** 352 m (1.15 ft) per second
**Cyclic rate of fire:** 950 rpm
**Magazine:** 20-, 25- or 32-round box

# The UZI in Action

***The UZI has proved to be one of the most successful of all the post-war sub-machine gun designs, and it has shown its combat worth on many occasions. It will remain in use for many years to come and is still in production today.***

***Seen here in South African service, the UZI is one of the most widely used sub-machine guns in the world. With stock extended and in careful hands, the UZI will shoot with reasonable accuracy up to 200 m (220 yards), although it gained its reputation at much closer ranges.***

The UZI sub-machine gun was conceived at a time when the new state of Israel had only just come into being. Almost as soon as Israel declared itself to be a state it was involved in a state of war that continues to the present day. In 1948 the neighbouring Arab nations attempted to crush Israel but failed, mainly as a result of the Israelis' determination to exist as a nation, and when the United Nations were at last able to impose a ceasefire the Israelis had established themselves by the simple process of defeating every one of their Arab foes.

All through the fighting of 1948 and 1949 the newly-formed Israeli army was armed with a hotchpotch of weapons. Sub-machine guns included old ex-German weapons and numbers of Sten guns, the latter being the usual weapon of the front-line troops. The Stens worked but were not regarded as being particularly reliable, and a replacement was thus sought. For supply safety it was considered suitable for the replacement to be manufactured locally, but at that time manufacturing facilities in Israel were few so the design had to be easy to make in quantity.

Several designs were put forward at the time. Most of them were 'paper' designs, but that of Lieutenant Uziel Gail was chosen. He had formed his design after careful examination of some Czech designs, notably the vzor (model) 23, 24, 25 and 26. These models were all basically the same, differing only in having a fixed or folding butt or the calibre used, but they all had the same basic mechanism and design feature: the use of a breech block, or bolt, that extended forward around the barrel. This had two main attractions: that at the instant of firing the mass of the bolt was well forward to ensure a good 'lock', and that as the bolt extended forward the barrel could be placed farther to the rear of the receiver or body to allow a short and handy weapon. Gail had no doubt obtained his study examples from the fighting during the War of Independence, and as at one point Czechoslovakia was happy to provide weapons to the new state, it is possible that the weapons came via a direct route. In any case Gail adopted the 'wrap-around' bolt to so pronounced a degree that his design was very much shorter than any contemporary equivalent. Gail also adopted the method of inserting the magazine through the pistol grip which not only provided a good balance for the weapon but it also made rapid insertion of a magazine easy using the principle that 'hand finds hand'. The folding metal butt was also taken from the Czech design.

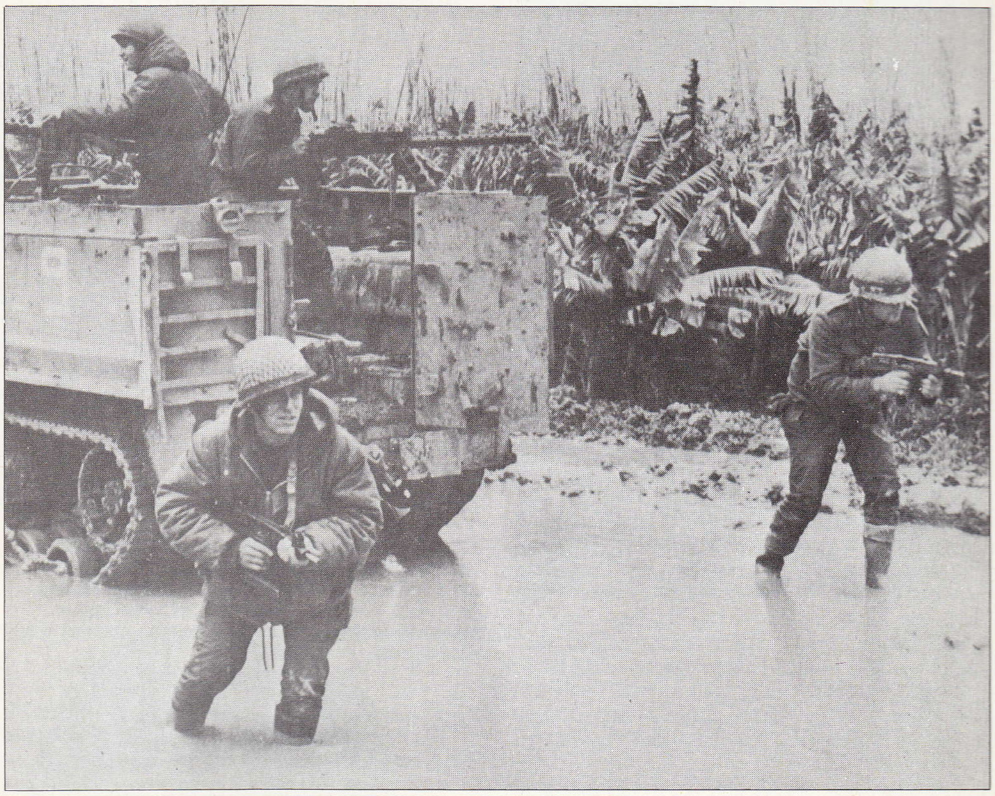
But Gail was no mere plagiarist. He introduced his own ideas, not the least of which was ease of manufacture. The Sten gun and the German MP 38 of World War II had demonstrated that sub-machine guns could be manufactured easily using simple metal stampings and virtually no machining, and Gail simply took this method one stage further: almost the entire body of his design was made from a single sheet steel stamping that was then bent into shape to form a robust body. But Gail went one better. He was aware that much of the terrain over which the resultant weapon was to be used was dusty and arduous to a degree. Any weapon would have to operate with the virtual certainty that dust, dirt and sand would get into the works, so Gail designed two grooves into the initial stamping that could gather up all the debris inside the body and keep it out of the way. Thus the bolt could operate without the friction caused by sand and dirt, and indeed Gail's design can keep working when many other weapons have seized solid.

Gail's design was eagerly adopted and placed into production, initially in a series of small machine shops but eventually using the production facilities of the state-owned Israel Military Industries. By 1953 the weapon was in service, and in deference to its designer was named the UZI. Gail himself went on to a distinguished military career and retired as a lieutenant colonel but his name is still a virtual military fixture.

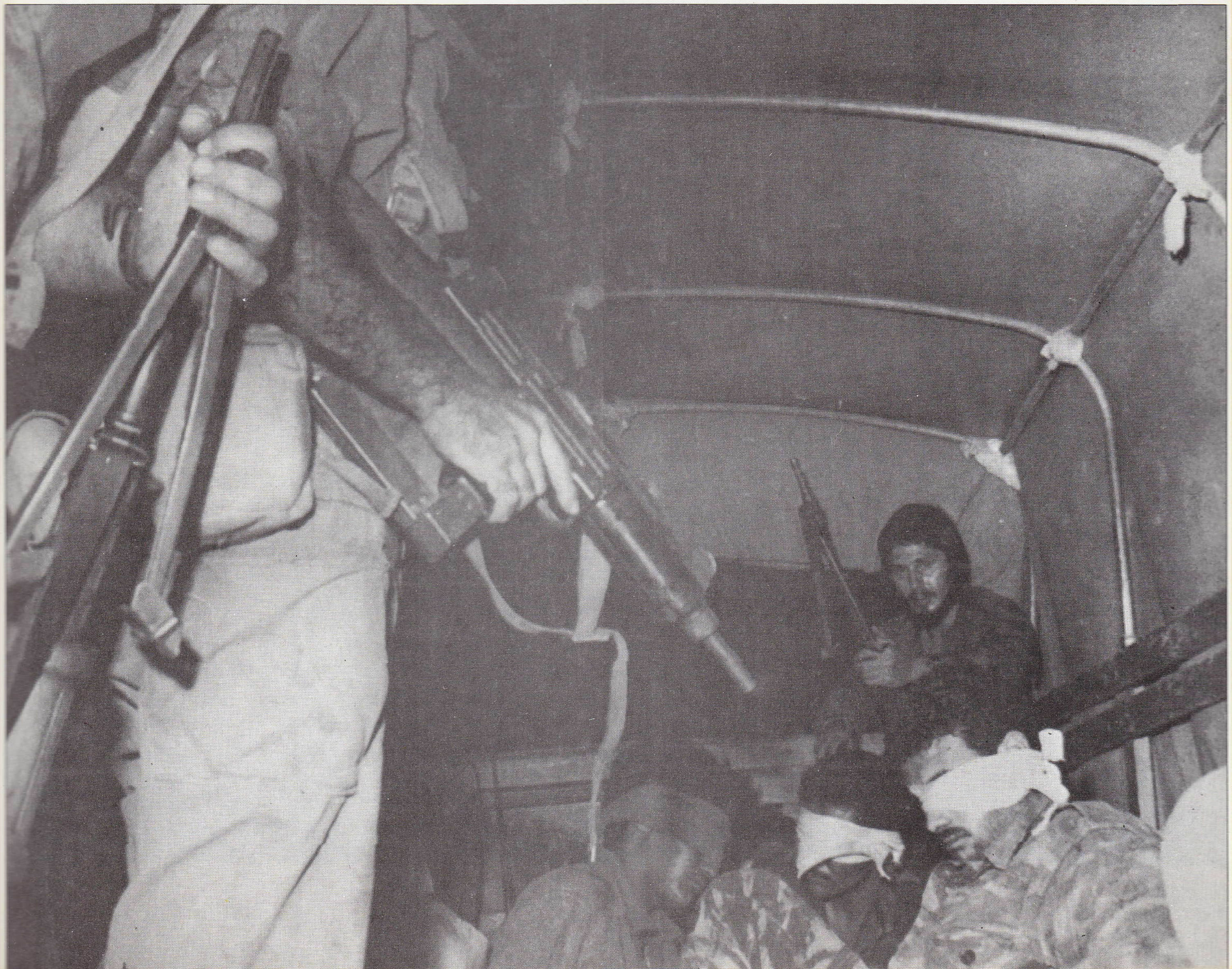
***In its early years, the young Israeli nation was unable to rely on outside help and the need for an indigenous arms industry was paramount. Uziel Gail's UZI design was ideal: simple to manufacture, it entered service in 1953.***

The UZI had its first major bout of conflict in Israeli hands during the Suez War of 1956. Before then it had been used more on the border patrols and clashes that marked the period, so that by the time it was used on a large scale most of the bugs inherent in any new weapon design had been eliminated. The troops liked the UZI: it was light, handy, and easy to aim and to operate. Versions with solid wooden butts were produced, but the type most favoured by the special forces such as the paratroops was the one with the folding metal butt. Only the special forces used the UZI as a standard weapon. The normal infantry and other units continued to use the standard service rifle of the day, but the UZI was and still is widely carried by second-line troops. It is small and light enough to be carried without any great inconvenience, and can be folded away into any small stowage space or even in a desk drawer.

*Right: Two UZI-armed Israelis de-bus from an M3 half track covered by the .30 calibre Brownings of their comrades. The UZI first saw major action in the 1956 Arab-Israeli conflict in the hands of the Israeli airborne forces.*



*Below: The aftermath of another Arab incursion into Israel: the survivors of a PLO unit are driven away to captivity. Note the magazines clipped together on the UZI; the one out of the gun is empty. When the second magazine is full it projects under the barrel.*

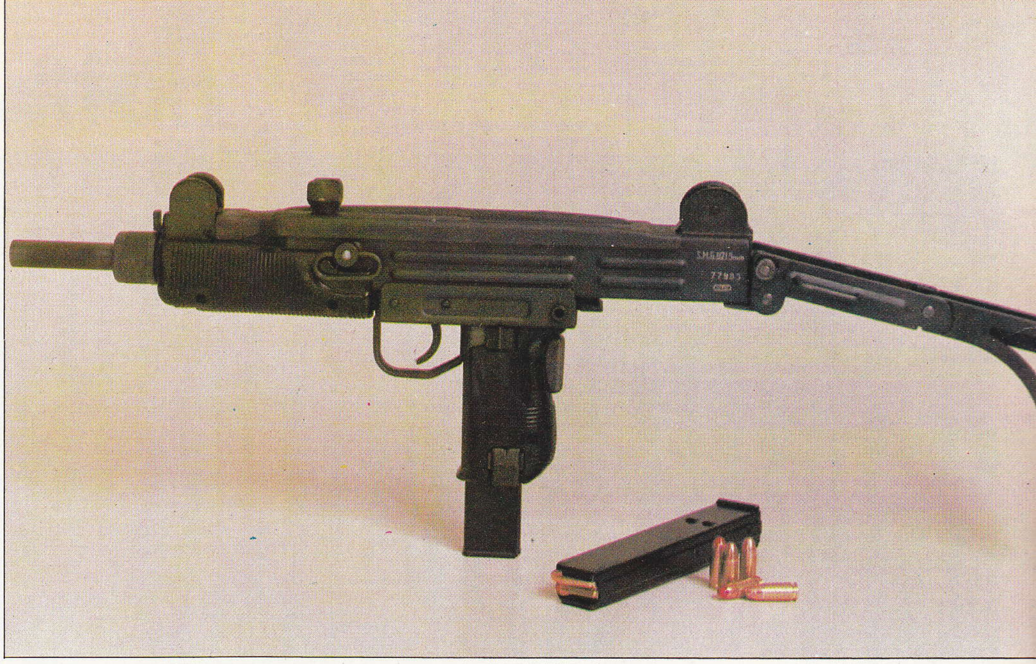


# The UZI in Action

This latter point is important, for in Israel any member of the armed services is likely to be called into action at almost any time. Despite Israel's stringent and often irksome security precautions, terrorists are still able to strike at centres of population at any time. Consequently even off-duty personnel frequently carry their personal weapons with them at all times, and even desk-bound personnel keep their weapons close at hand. In many cases this means the UZI, and it is not an uncommon sight in any Israeli town or city to see groups of off-duty personnel enjoying themselves in a sidewalk cafe with UZIs nonchalantly slung from their chairs. Even the women personnel of the Israeli forces have to follow this course of action and the UZI is a common sight in shops and streets all over Israel.

Thus the UZI is now a virtual military badge in Israel, and it may be seen emblazoned on belt buckles and even stamped on T-shirts. It would be safe to say that virtually every Israeli citizen is fully familiar with its workings and knows how to use it properly. Some of this knowledge has no doubt been learned the hard way in battle, for the UZI has been used in every Israeli-Arab conflict since 1956 and in many of the smaller campaigns that have marked the life of Israel. In nearly every newsreel or front-page photograph of Israeli soldiers in action an UZI may be discerned somewhere in the frame.

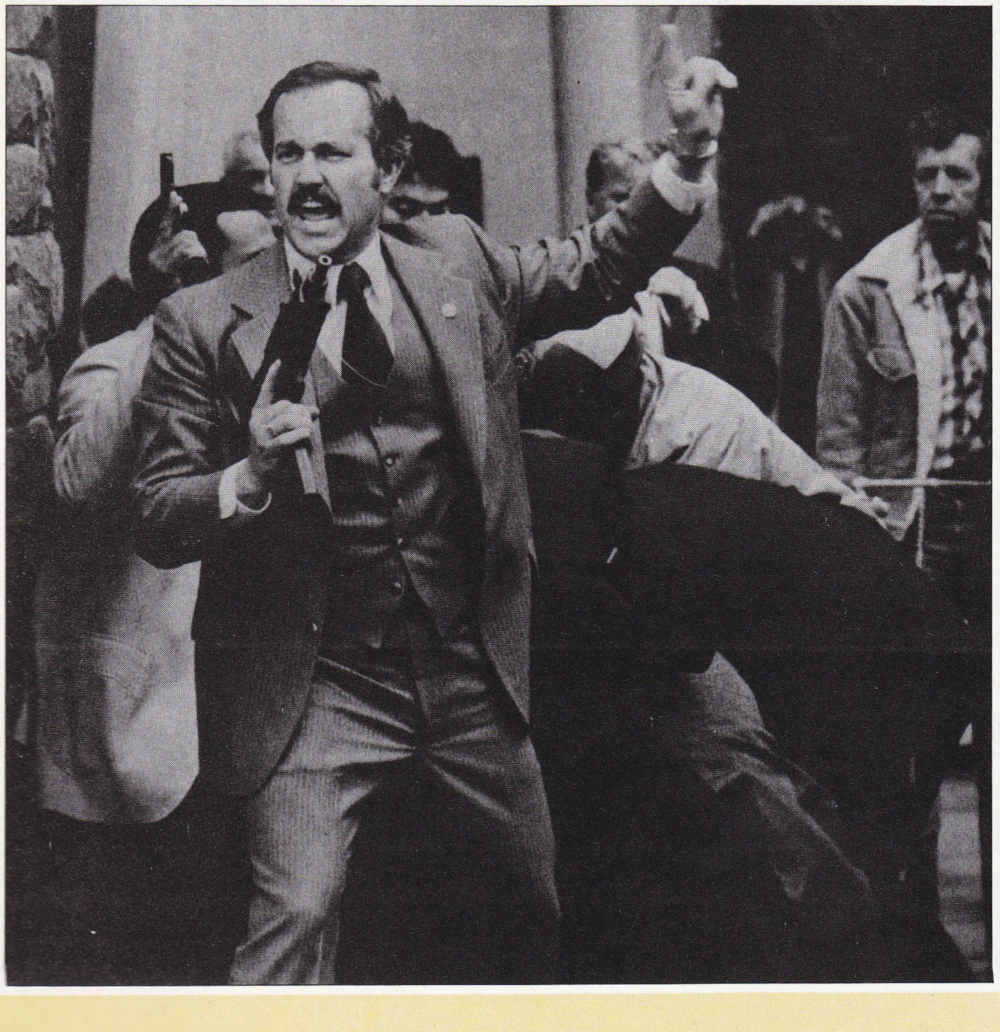
Typical of the use of the UZI in the hands of the Israeli special forces was the taking of Beaufort Castle on the night of 7 June 1982, during the opening stages of the Lebanese War. Beaufort Castle is situated just to the north of the Litani river inside Lebanese territory, but the Israelis had already advanced to the Litani in what at first appeared to be an anti-PLO campaign. To advance any farther north past the Litani Beaufort Castle had to be taken, for this old crusader fortress is located in a commanding position across any advance route to the north.



*The UZI remains a favourite weapon of the Israeli special forces, who used it to great effect during the storming of Beaufort Castle on the night of 7 June 1982. Changing magazines in the dark is made easier by having the magazine housed in the pistol grip.*

Needless to say the PLO was as aware of the importance of Beaufort Castle as the Israelis. Despite the age of the fortress the Palestinians had further improved the old fortifications and had manned not only the walls of the fort but the surrounding area. Inside the fortress walls the old underground areas had been further improved and were in use as stores and bomb-proof shelters. Not surprisingly the PLO considered the fortress to be virtually impregnable. It is set on a high and almost inaccessible promentory, and the PLO garrison was ready for an attack. It seemed as though the only way to take the position was by the time-honoured process of siege and a set-piece attack.

The Israelis thought otherwise. They had to take Beaufort Castle quickly in order to press on with advance to Beirut. They decided on a *coup de main* to be carried out by members of their special forces, who approached the castle from the area of the Aqiya Bridge over the deep gorge of the Litani river. The capture of this bridge was itself a major military achievement for it was wired for demolition and was captured before the charges could be fired. As the bulk of the Israeli central sector forces moved north one group moved in their half-tracks and Jeeps towards the castle as the evening of 6 June moved towards darkness. In the failing light they simply drove and fired their way through any PLO positions they encountered and rapidly came to under the walls of the fortress itself. Unfortunately it was not possible to rush the only track leading to the gates, so the steep walls of the point on which the castle stands had first to be scaled before even the walls could be reached. This had to be done by the old way with grappling irons, climbing skills and ropes. Under these combat conditions the UZI proved invaluable. It was easy to sling out of the way when climbing yet easy to get into action when required. In action its high fire rate was devastating at close ranges, and in the dark there was often no time to take deliberate aim. Thus the short UZI came into its own, for the Israelis could get their weapons on target much faster than their opponents armed with AK-47s.



*Had he not been close enough to be tackled physically, there can be little doubt that Hinkley's attempt to kill President Reagan would have ended abruptly in a hail of 9-mm fire from the Presidential guards' UZIs.*

Needless to say the PLO did not stand back and let the Israelis take the castle unopposed. They fought back with a ferocity that surprised the Israelis, and casualties were heavy on both sides. From time to time the Israelis used mortars to fire illumination flares, to allow them to see where they were and where they were going, but much of the fighting was at close quarters and at times (such as when they were still climbing their ropes) the Israeli troops' casualties were heavy. Some of the Israelis had to hang onto their ropes with one hand and fire their UZIs with the other. Some covering fire came from heavy machine-guns mounted on the halftracks far below, but the assault force had to supply most of its own covering fire.

Once the Israelis were over the walls the hand-to-hand fighting continued until just after midnight, when the Israelis took control of the fortress. Even then isolated bands of PLO fighters continued to fight, some to the last, though the castle was under Israeli control. As day broke the Israeli troops were able to appreciate fully the importance of the position they had taken. They were able to observe a wide stretch of terrain that stretched from the Mediterranean far to the west, over the coastal plain and up into the mountains of the interior. They could see the mechanized Israeli columns making their way north without risk of a powerful PLO stronghold in their rear.

Beaufort Castle was an action in which the UZI showed to its best advantage. In any close-quarter combat a short and handy weapon like the UZI provides any combatant with a tactical advantage, and when that advantage is allied to a determination to win such as that displayed by the Israeli soldiers who stormed the castle the result was inevitably a minor military classic.

*Right: His UZI by his side, a gunner of No. 4 Battery, 305th Panzer Artillery, pauses by an M113 Armoured Personnel Carrier. The extensive use made of the UZI by West German forces is a great tribute to the design.*

*An important role fulfilled by the sub-machine gun is that of vehicle crew personal armament. In the confined space of a tank there is obviously no room for a full-size rifle. Here, the crew of a Bundeswehr Leopard pose with their folding-stock UZIs.*

ITALY

# 9-mm Beretta Model 12s

During World War II the Beretta sub-machine guns were among the most highly-prized of all war trophies, and many remained for many years after the war in service with both military and paramilitary formations. The last of the 'war-time' Beretta variants was produced in 1949, and in 1958 an entirely new Beretta design was introduced. This owed nothing to previous designs and for the first time Beretta adopted the tubular receiver and stamped component construction that had for long been employed by many other manufacturers. The new design was the **Beretta Model 12**, but although it looked simple it was still a Beretta product, as was revealed by the overall high standard of finish and by its quality manufacture.

The Model 12 had an orthodox construction down to the 'wrap-around' bolt that was by then commonplace. This allowed it to be a short and handy weapon that as usual could be fitted with either a folding metal stock or a fixed wooden stock.

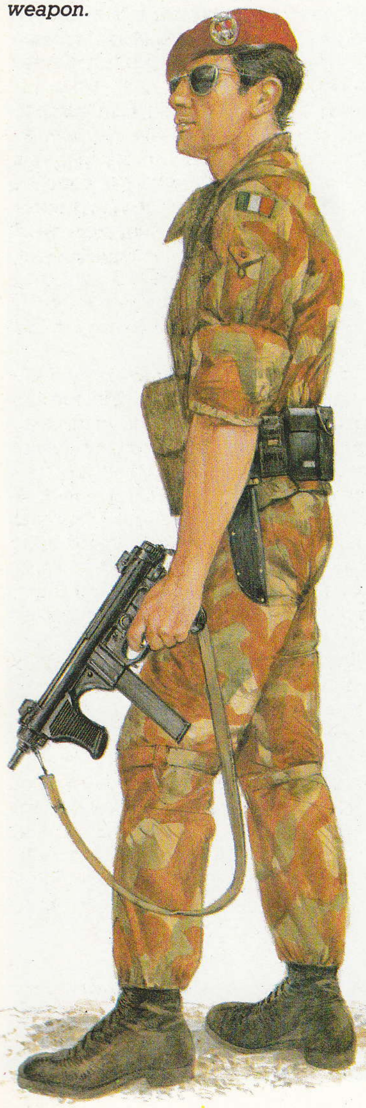
The Model 12 was sold extensively to such nations as Libya and Saudi Arabia, but only in small numbers to the Italian armed forces, who purchased the type for use only by special units. However, Beretta was able to negotiate licence production of the Model 12 in Indonesia and Brazil for local sales and export.

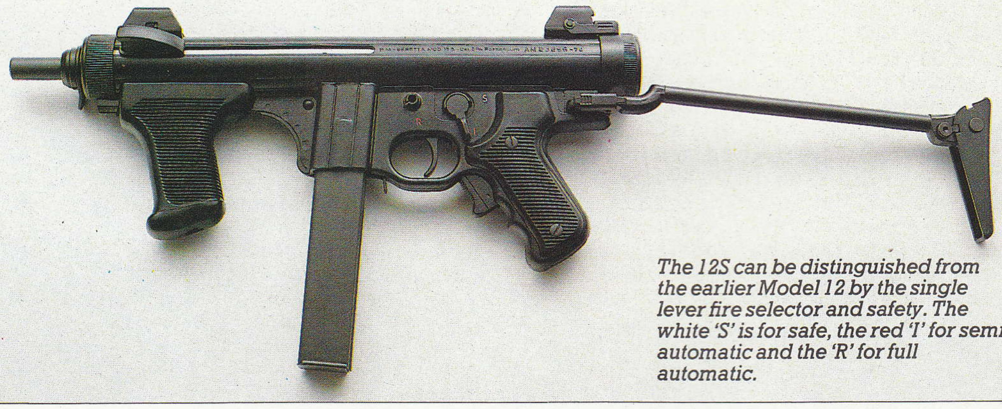
Beretta then decided to develop the basic design one stage further and produced the **Model 12S**. This is now the current Beretta sub-machine gun and production of the Model 12 has now ceased. Externally the Model 12S looks very like the Model 12 but there are some detail differences. One is the epoxy-resin finish, making the metal resistant to corrosion and wear. The fire selector mechanism on the Model 12 was of the 'push through' type, operated by pushing a button from either side of the receiver just over the pistol grip, but the Type 12S has a conventional single-lever mechanism with a safety that locks both the trigger and the grip safety. The folding butt, when fitted, now has a more positive lock for both the open and the closed positions, and some changes have been made to the sights. One laudable feature that has been carried over from the original Model 12 is the retention of the raised grooves that run along each side of the tubular receiver. These grooves act as catchers for any dirt or debris that find their way into the interior, and enable the Model 12S to operate under really muddy and arduous conditions.

To date the Model 12S has been purchased by the Italian armed forces in small numbers, and more were sold to Tunisia. Once again Beretta has been able to negotiate licence production and the Model 12S is now being offered by FN of Herstal, Belgium, as part of its small arms range. Incidentally, the Model 12 is one of the favoured weapons of 'Carlos', the international terrorist.

*A dramatic break from pre-war Beretta designs, the Model 12 and 12S use heavy sheet metal stampings to form the magazine housing and receiver, but retain the elegant simplicity associated with Beretta.*

*The men of the Italian Parachute Brigade are mainly equipped with the BM59 rifle, but the Beretta 12S is better suited for close-range work. The 12S is designed to operate in harsh environments, having grooves along the sides of the receiver which catch any debris entering the weapon.*





*The 12S can be distinguished from the earlier Model 12 by the single lever fire selector and safety. The white 'S' is for safe, the red 'I' for semi automatic and the 'R' for full automatic.*

### Specification

**Model 12S** (metal stock version)
**Calibre:** 9 mm (0.354 in) Parabellum
**Weight:** loaded with 32-round magazine 3.81 kg (8.4 lb)
**Length:** with stock extended 660 mm (26 in) and with stock folded 418 mm (16.45 in)
**Length of barrel:** 200 mm (7.87 in)
**Muzzle velocity:** 381 m (1,250 ft) per second
**Cyclic rate of fire:** 500-550 rpm
**Magazine:** 20-, 32- or 40-round box

*Right: Although widely exported, the Model 12 is only issued to Special Troops of the Italian army, the rest having to content themselves with the MAB 38/49. The Model 12 is a very steady weapon with remarkably low muzzle climb while firing in full automatic.*

# Royal Navy

Part 3

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***Standard shipborne ASW and anti-shipping helicopter for smaller Royal Navy vessels, the Westland Lynx has recently been equipped with British Aerospace Sea Skua missiles, which were combat-tested under extremely difficult conditions during the South Atlantic campaign.***

## Fleet Air Arm

Known as the Naval Air Command to the Admiralty, the Fleet Air Arm is primarily used as an extension of warships' weapon and sensor systems to engage and identify targets over the horizon. In 1984 the service had the following units in commission:

| *Squadron* | *Aircraft* | *Primary role* |
|---|---|---|
| 800 | Sea Harrier FRS.Mk 1 | combat air defence |
| 801 | Sea Harrier FRS.Mk 1 | combat air defence |
| 899 | Sea Harrier FRS.Mk 1 and T.Mk 4N | operational training |
| 810 | Sea King HAS.Mk 5 | ASW training |
| 814 | Sea King HAS.Mk 5 | ASW |
| 820 | Sea King HAS.Mk 5 | ASW |
| 824 | Sea King HAS.Mk 5 | ASW |
| 826 | Sea King HAS.Mk 5 | ASW |
| 819 | Sea King HAS.Mk 2A | ASW |
| 849 | Sea King AEW | airborne early warning |
| 845 | Wessex HU.Mk 5 | air commando assault |
| 846 | Sea King HC.Mk 4 | air commando assault |
| 829 | Wasp HAS.Mk 1 | training/ASW/ hydrographic survey |
| 815 | Lynx HAS.Mk 2/3 | anti-surface warfare/ASW |
| 702 | Lynx HAS.Mk 2/3 | aircrew training |
| 705 | Gazelle HT.Mk 2 | basic training |
| 706 | Sea King HAS.Mk 5 | aircrew training |
| 707 | Wessex HU.Mk 5/ Sea King HC.Mk 4 | aircrew training |
| 750 | Jetstream T.Mk 2 | observer training |
| 771 | Wessex HU.Mk 5 | SAR/training |
| 772 | Wessex HU.Mk 5 | SAR/fleet requirements |
| FRADU | Hunter T.Mk 8C,<br>Hunter GA.Mk 11,<br>Canberra T.Mk 22,<br>Canberra TT.Mk 18,<br>Canberra T.Mk 4 | fleet requirements |

The Sea Harrier squadrons have secondary roles of photo and radar reconnaissance, ground attack and surface strike against enemy surface craft. For the air-to-surface role they can carry 454-kg (1000-lb) free-fall and retarded HE bombs, 272-kg (600-lb) BL755 cluster bombs, 51-mm (2-in) rocket pods and in the very near future the sea-skimming Sea Eagle anti-ship missile. They are credited with a tactical nuclear bomb delivery capability, for which they apparently carry a single 1/60-kiloton variable-yield 'Green Parrot' free-fall bomb. The Sea Harriers can also be used in a rapid response ASW role delivering a sonobuoy field to a predetermined datum point.

The primary ASW platform is now the Sea King HAS.Mk 5 with the Marconi LAPADS (lightweight acoustic processing and display system) sonobuoy processing equipment and mini-Jezebel sonobuoys. A magnetic anomaly detector is also being fitted together with the new Sea Searcher ASW/ surface target radar. The active dunking sonar capability has been retained from the HAS.Mk 2 airframes which constitute the majority of the Sea King HAS.Mk 5 fleet. The armament can either be four Mk 46 or Stingray homing torpedoes, or four Mk 11 HE depth charges or, like its American counterpart, one B57 5-kiloton low-yield nuclear depth bomb. The elderly Mk 46 has a range of 10.9 km (6.8 miles) and a speed of 45 kts at 15.25 m (50 ft), but these figures are reduced to 5.45 km (3.4 miles) and 40 kts at 457 m (1,500 ft) depth because of the propellant used. The Mk 46 uses a spiral search pattern and can acquire targets at ranges up to 1.45 km (0.9 miles) on its active/passive homing system. Its replacement is the Stingray lightweight torpedo, which is a 'smart' weapon having a speed of 45 kts, a range of 7 km (4.35 miles) and a diving depth of 800 m (2,625 ft). Apparently the directed-charge warhead it carries is much more effective against the Soviet submarine hull than the blast type fitted to the Mk 46. The nuclear depth bomb, nicknamed 'Lulu', is a weapon that is used well away from friendly ships and submarines so that they are not damaged, and is the only nuclear ASW weapon the Royal Navy possesses. The other helicopter types which can carry the 'Lulu' are the Sea King HAS.Mk 2, the ship's flight Wasp HAS.Mk 1 and the ship's flight Lynx HAS.Mk 2/3. The Lynx can alternatively carry either two homing torpedoes or Mk 11 depth charges or (for its primary anti-surface role) two or four Sea Skua semi-active homing anti-ship missiles, whilst the Wasp can carry two Mk 44 or Mk 46 torpedoes or Mk 11 depth charges or two wire-guided AS.12 missiles.

The Commando helicopters usually carry 7.62-mm (0.3-in) machine guns and 51-mm (2-in) rockets for ground suppression of assault zones. In this they will probably be backed by machine-gun, rocket and TOW fire from Royal Marine helicopters plus the weapons of any RAF aircraft available. The total lack of airborne early warning aircraft so keenly felt in the Falklands has now been resolved by the reactivation of No. 849 Squadron with Sea King AEW helicopters. However, the reasons why such a combination was rejected in the late 1960s to replace that squadron's Fairey Gannets still hold today and a new AEW platform must be found. The carriers will embark a flight of three Sea King AEWs as a normal part of their carrier air group.

For the future, the major re-equipment of the Sea King ASW squadrons will start in the late 1980s with the introduction of the EH101, whilst the Sea Harrier squadrons will receive both new-build and completely refurbished aircraft carrying a new airborne intercept radar suitable for use with the AIM-120 radar-guided missile that will supplement the infrared AIM-9L Sidewinder it uses at the moment as its primary air-to-air weapon.

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***The Westland Sea King in its HAS.Mk 5 form is the fleet's primary ASW platform, and since the harsh lessons of the Falklands it has also been equipped with a modified Searchwater radar to provide a limited degree of airborne early warning (AEW).***

12 PASS

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*The Royal Navy returned to fixed-wing aircraft operations with the entry into service of the British Aerospace Sea Harrier. The three aircraft (from Nos 800, 899 and 801 Squadrons) are seen prior to their combat debut in the South Atlantic in 1982.*